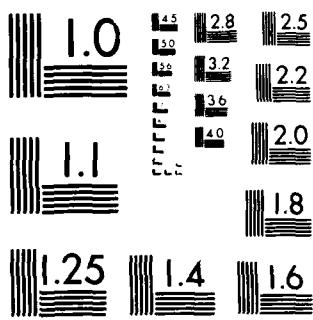


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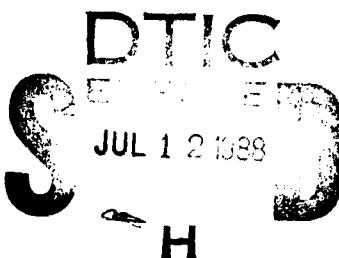
A HEALTH FACILITY PLANNING
METHODOLOGY FOR ARMY
TROOP MEDICAL CLINICS

A Problem Solving Project
Submitted to the Faculty of
Baylor University
In Partial Fulfillment of the
Requirements for the Degree
of
Master of Health Administration

By

Major Donald A. Krieger, MSC

April 1981



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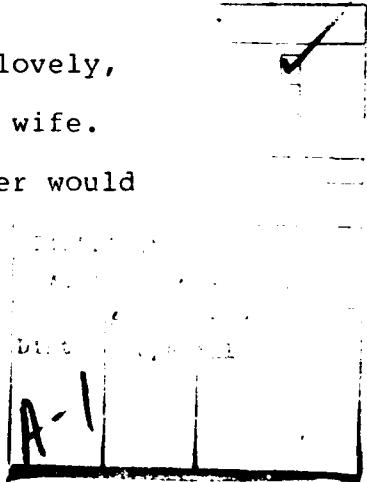


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CHAPTER I

INTRODUCTION

The Need for Developing a TMC Planning Methodology

The planning of health care delivery systems and facilities has received increased attention and emphasis within the past decade. The promulgation of laws, regulations and guidelines by federal, state and local governments addressing health planning issues has been prolific. Professional health care organizations and accreditation organizations have followed this trend by offering an increasing number of training programs and publications. The Joint Commission on Accreditation of Hospitals (JCAH) has even included a standard of performance addressing institutional planning in its Accreditation Manual for Hospitals.¹ The literature has likewise addressed the multi-faceted health care planning issues. One survey showed that before the end of the decade of the seventies nearly four hundred articles had been published addressing the issues of health planning as it impacted on cost containment alone.²

The emphasis on health care planning has not been contained within the civilian sector. The military services have felt the impact of laws, regulations, and guidelines promulgated by organizations such as the Office of Management and Budget (OMB), Department of Defense, and, of course, the Congress.

Within the Army, the Army Medical Department has been charged with the responsibility of developing and publishing appropriate health care and health facility planning guidelines. The result of this attention paid to health planning is an expectation for military health care organizations to execute more appropriate and effective health planning.

When examining the realm of health care delivery, it is evident that the health care facility is an elemental building block in effecting any delivery of health care services. Since it is incumbent on the Medical Department Activity (MEDDAC) and Medical Center (MEDCEN) commanders to efficiently utilize his/her resources to accomplish the ultimate mission of providing quality health care³ and since it can be reasoned that the facility in/from which health care is rendered is an elemental resource, then it is apparent that the commander must address facility planning as an essential component of his/her organization's activities.

Ideally there would be the capability of organic expertise in every MEDDAC/MEDCEN; however, constraints of manpower, money and so forth preclude this capability. Therefore, the MEDDAC/MEDCEN commander must depend on limited available assistance from senior organizations and/or publications to aid in the health facility planning efforts. If the MEDDAC/MEDCEN is proposing a major undertaking such as a replacement hospital, normally, the senior organization (due to political and fiscal magnitude considerations) is more likely to provide detailed assistance. Projects of lesser magnitudes will probably receive considerably less help.

This situation may be viewed by some as being of little consequence; however, it must be appreciated that the Army's health care delivery philosophy is predicated on the principle of providing appropriate health care services to its service members at the lowest possible echelon. This is done in an attempt to treat the service member and return him/her to the member's place of duty within the shortest possible time, thereby conserving manpower and promoting the readiness of the military organization. The elemental fixed medical installation in this system in a garrison environment is the troop medical clinic (TMC). One can readily perceive that although their political and fiscal impact is much less than a hospital facility, pragmatically, their operational impact on medical care delivery is extremely great. If the MEDDAC/MEDCEN commander is expected to adequately plan for these troop medical clinics, and if one considers that the supportive resources for effecting this planning are scarce, logically, these commanders and their staffs should have some guidance for effecting planning for a TMC. Currently there is no written methodology or consolidated assistance generally available and specific to TMC planning. Although some planning information can be extracted from civilian publications, one must rigorously sift through many writings in order to extract those elements of various methodologies which would specifically apply in the military setting.

This lack of written, military health care specific, troop medical clinic planning methodology perpetuates fragmented

approaches to the TMC planning process.⁴ As previously alluded, the commander of the MEDDAC/MEDCEN must largely rely on the organization's staff and on their experience in planning for a troop medical clinic. Historically, the planning process had consisted of the delegation of the planning action to one of the MEDDAC/MEDCEN staff members - normally the logistician, due to his/her interface with and responsibilities for physical plant operations. The planning methodology utilized was then a function of the logisticians' personal experience and philosophy coupled with a small amount of knowledge gained through basic logistical courses and any advanced course which may have been attended. The problem of the MEDDAC/MEDCEN is compounded at the major medical command level where the health planning coordinators are faced with incomplete, incongruous or ambivalent information as well as other questions concerning depth of a preliminary project proposal research, etc. At the highest Army health facility planning levels, it is apparent that the proposals have been approached from many perspectives. While much basic information is contained in the proposal (pursuant to regulation requirements⁵), the MEDDAC/MEDCEN must often be queried for additional explanatory data. All of this takes time, resources and due to personnel turnovers at all levels, may require duplication of original planning efforts at the MEDDAC/MEDCEN level.

The need is apparent. The development of a universally applicable troop medical clinic planning methodology would not only provide a definitive reference for the installation

medical organizations but would also assist the senior health facility planning organizations in evaluation and continuation of the TMC planning process with minimal duplication of the planning effort.

Statement of the Problem

The problem is to develop a planning methodology for troop medical clinics. This methodology should be able to be applied, modified as appropriate for the environment in which the planning is conducted and should provide a clear, concise method for planning and justifying such a project while simultaneously providing an audit trail for future review, study and elaboration as required.

Limitations

Any study, analysis or development project contains inherent constraints which preclude perfect research or application. This paper's target, the development of a planning methodology for planning a TMC is developed with the realization that it is not thoroughly tested under all environmental conditions. Constraints in planning resources, political situations, time, manpower and the availability of information and data certainly impact on any methodology's viability. However, since the planning methodology is to be developed so that it is generally universally applicable and malleable pursuant to the requirements of a particular installation, it is surmised that the proffered methodology will be useful and that the effects of the aforementioned constraints will be minimal. Additionally, the

lack of literature specifically addressing a methodology for planning a troop medical clinic has necessitated that the author draw together elements from other various works, personal planning experiences as well as the experience of other health planning personnel. This approach is considered to be pioneering rather than presumptuous.

The Literature and TMC Planning

In addressing the literature as a source of information concerning the existence of similar circumstances and in discerning possible solutions to the dilemma, military, governmental and civilian literature was examined. Within the military realm, there is little research literature in this area of planning methodologies for troop medical clinics.⁶ Most documents are confined within the offices of health facility planning organizations or policy making offices. Even then the literature takes the form of unpublished reports or letters concerning health planning and construction lessons learned which concentrate on design and operational facets rather than on the planning methodology precursors to the facility construction.

Other types of military literature encompass numerous regulations and documents which set forth requirements for documentation (Army Regulation 415-15, Military Construction, Army (MCA) Program Development); coordination and/or justification (Department of the Army Pamphlet 210-4, (Coordination of Army Development with State and Local Governments); space and services

scope planning (Space Guidelines for Facilities Programming of Health Clinics, U.S. Army Health Facility Planning Agency guidance document; and Bureau of the Budget (now Office of Management and Budget) Circular A-57 as amended, Space Planning for Federally Funded Health Care Facilities and other general guidance documents. The two major deficiencies in these health planning/health planning related documents are: the lack of direct attention to a universal health planning methodology and the lack of direct attention to the planning needs of the troop medical clinic planning process.

Within the governmental literature, there are numerous documents which address health planning. However, the majority of these documents address the requirements of Public Law 93-641 (The National Health Planning and Resources Development Act of 1974) or subsequent amendments to this act or other acts which address health care resources. Many documents (such as Office of Management and Budget Circular A-95, Evaluation, Review and Coordination of Federal and Federally Assisted Programs and Projects) emphasize the coordination aspects of health planning. Still other governmental publications appear to directly address the type of planning methodology sought by planners of troop medical clinic type facilities. Documents such as Hospital Outpatient and Emergency Activities Functional Programming Guidelines; Space Planning Guidelines for Ambulatory Health Centers; Guidelines to Functional Programming, Equipping, and Designing Hospital Outpatient and Emergency Activities published by the Department of Health and Human Services (formerly Department

of Health, Education and Welfare) appear to offer limited applicability for developing some methodology for TMC planning; however, it is quickly discerned that there is not a true treatment of a planning methodology for a small, specific ambulatory health care facility such as the troop medical clinic. Space Planning Guidelines for Ambulatory Health Centers comes the closest to providing specific guidance for the TMC planner; however, it only addresses the suggested sizes and utilization of each functional space within the facility. While this is an excellent guide to typical uses of functional spaces, the sizes recommended by the document are not directly applicable to the TMC planner due to the regulatory military documents which prescribe sizes per functional space.

There appears to be some movement within the state health planning organizations to produce some guidance concerning planning ambulatory health care centers. The Oklahoma State Health Planning Commission has recently developed a prototype document which addresses some of the major considerations for planning these type facilities.⁷ While not addressing a specific methodology, the document does address basic considerations to be made in the planning efforts. Essentially, the document is similar to the Department of Health and Human Services' booklet Space Planning Guidelines for Ambulatory Health Centers.

As one can perceive, while there are many excellent planning documents available within the governmental arena, and while

they provide the planner with information which would enhance the planner's effectiveness and efficiency and understanding, they are not a panacea or even a partial solution to providing a planning methodology for planning a troop medical clinic.

Within the civilian literature, there is a veritable plethora of articles and books dealing with the subject of health planning. The issues of regional versus local planning,⁸ micro versus macro health planning,⁹ long range planning versus short range planning¹⁰ and other such issues consume much space in current literature. While this type of writing should certainly be of great interest to health care organizations, there is truly little concrete guidance in so far as is applicable to planning a small ambulatory facility such as a troop medical clinic.

Some literature resources provide elemental frameworks which do show promise for application to the development of a planning methodology for the small, troop medical clinic type facility. Various authors offer slightly different approaches to the institutional (micro) planning efforts. Among those who offer some planning framework at the micro level are Rex Whitaker Allen and Ilona von Karolyi. In their book, Hospital Planning Handbook, they proffer three main stages in their health planning sequence : feasibility determination; master program and plan development; and, programming.¹¹ This book in its attention to the space requirements for a hospital is certainly all-encompassing and provides many excellent considerations for planning clinical

spaces (such as determining the numbers of offices/exam rooms based on specific planning standards of time per visit); however, its slant toward the hospital setting precludes its direct use for planning TMC type facilities at Army installations.

Spiegel and Hyman's book, Basic Health Planning Methods espouses a six step approach to health planning: identifying the problem (needs assessment and resource analysis); inventing health resources; generating and considering alternatives; priority determination; and, lastly evaluation.¹² This book provides an extremely comprehensive discussion of each of these planning steps. Many elements of their book, particularly the treatment of needs assessment, alternatives and evaluation processes, would certainly be of substantial use to any planning body; however, this book is certainly not to be considered a concise planning methodology specific for planning a TMC. Its broad implications and multifaceted approaches to issues covers such a large spectrum so as to be more educational (for which it is intended) rather than a guide for planning a specific type of facility.

While many authors appear to agree in principle on various elemental tenets of health planning (need for data, resources, a planning mechanism, some type of evaluation and implementation strategy) they differ in methods of addressing the issues. Some authors develop elaborate flow diagrams to ensure strategic elements are appropriately considered. James A. Rice

offers one such approach (figure 1-1)¹³ which facilitates an organization's efforts in developing its strategic plan (a precursive step to development of the facility plan).

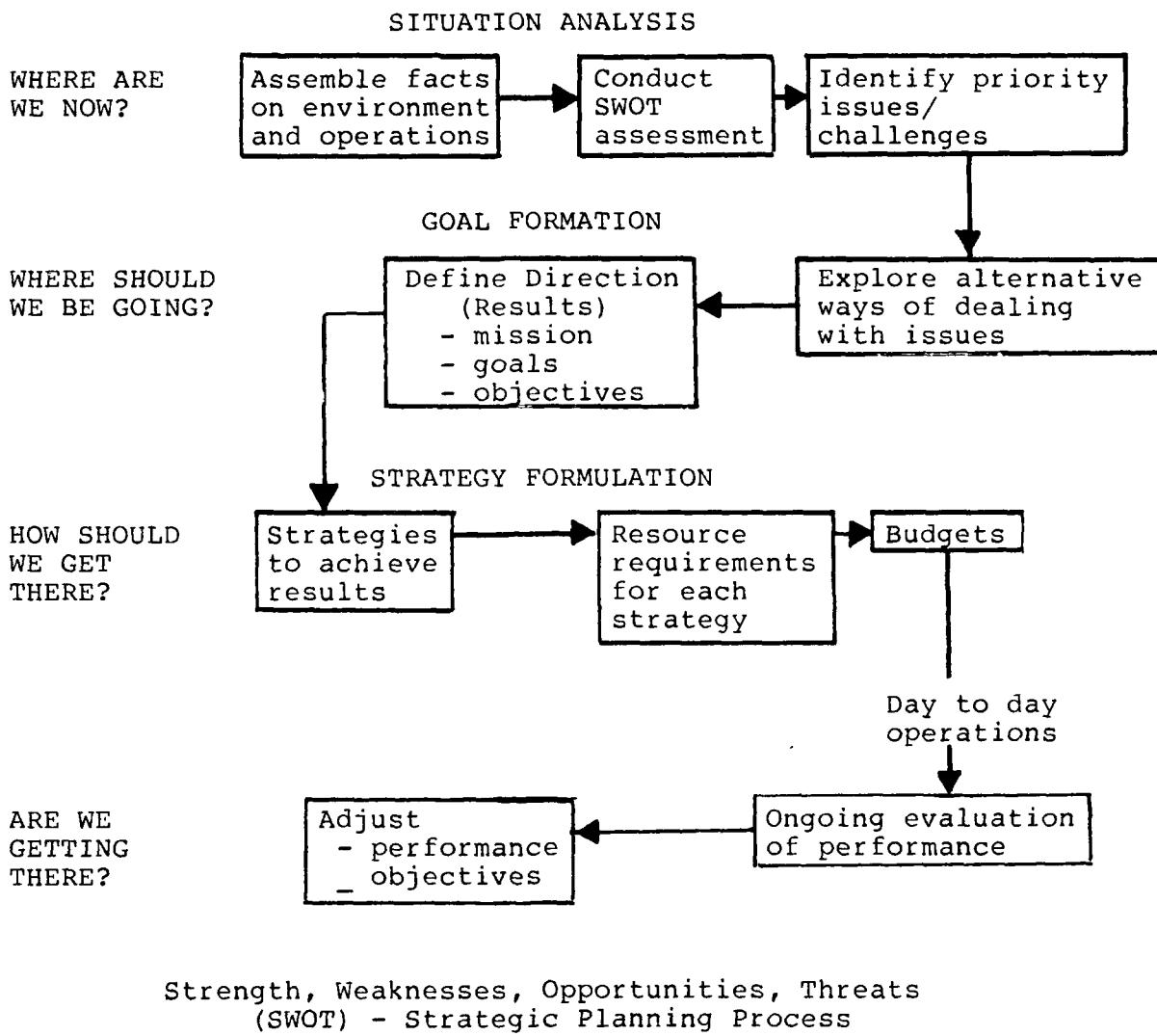


figure 1-1

Other authors have essentially the same process in mind, yet express it in a more general, systems approach manner¹⁴ such as is displayed in the general systems approach model in figure 1-2.

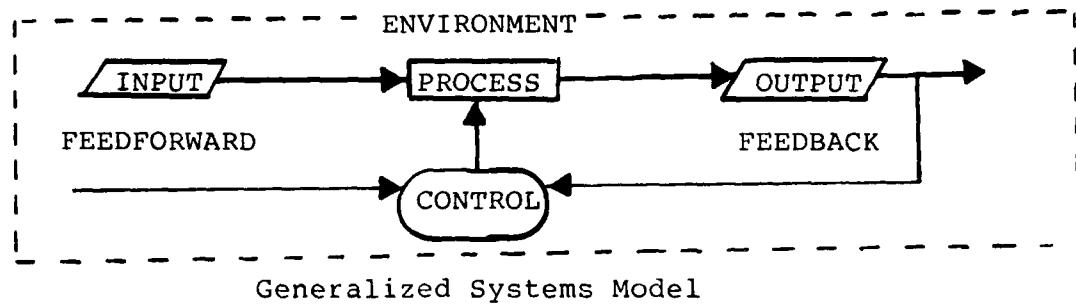


figure 1-2

The generalized systems approach displays the system which is composed of the inputs (such as information, resources, etc.), a process action (such as methodology or machinery process) and output (an end product), a cybernetic loop which consists of the feedback (information about the output such as reports, surveys, etc.); feedforward (which is really information from the environment concerning future circumstances or potentials) and the control element which acts much as a helmsman in steering the system, making fine adjustments to the system so that the output is that which is truly desired. All of this system is, of course, embedded in an environment which is specific to that system. This generalized approach can certainly be applied in a general manner to all phases of any planning process.

When examining specific planning methodologies, one is literally consumed by these various approaches. Methodologies can range from detailed mathematical tools as is proffered by Lawrence Zelner and Barry Badner in "An Engineers Approach to Data Collection and Planning"¹⁵ and Frank Rees' article "Mathematical Modeling Can Identify Departmental Space Needs"¹⁶

to less mathematically oriented pathways as suggested by Owen B. Hardy and Lawrence Lammer's book, Hospital, The Planning and Design Process.¹⁷ One readily attainable literature source, Hospitals, Journal of the American Hospital Association, regularly features a section entitled "Design Lines". While this section often addresses ambulatory care facilities, there is generally no treatment of the planning methodologies or background short of a comment revealing that there was a "determined need" or a "concerted planning effort." Much of the literature addressing ambulatory care facilities extoll the benefits of this or that design, particularly in terms of cost containment, patient access and acceptance, etc. While these are laudable attributes, one must remember that without the planning effort, the respective facility would never have been constructed. Other civilian literature specifically addressing ambulatory health care facilities such as Seth Goldsmith's book, Ambulatory Care, reveals many experiences with the organization and operation of various types of ambulatory care facilities; however, there is no treatment of the facility planning efforts required to produce the facilities.

Although there are many planning methodologies proffered in hospital oriented literature, none truly "fit" the planning requirements for the troop medical clinic due to planning pathways (process) requirements, types of services to be provided, and the regulations for

operation, design and construction. In literature oriented toward ambulatory health care facilities, one is able to discern a similar problem. While health care literature provides a vast amount of information concerning various elements of health planning methodologies , the military health care facility planner (and the organization which has the planning responsibility) are unable to directly apply this information to the planning efforts for a troop medical clinic.

The Problem of Planning A Troop Medical Clinic

If one examines the health care delivery system on Army installations, it can be seen that one of the first points of contact for the active duty member is the TMC. Therefore, it is of paramount importance that the installation's major medical organization be able to accurately and appropriately plan for these facilities. Since no specific formalized methodology currently exists to aid the MEDDACS in this process, it is appropriate to address this issue.

In the development of any methodology or format, it is imperative that the user realize that the purported methodology is not, strictly speaking, a cook book. It must be tempered with pragmatisms which may preclude consideration of various elements of the methodology and/or include elements not specifically addressed by the methodology. Thus, one can

perceive that any methodology for military health facility planning (and health facility planning in general) is by no means concrete nor sacred. The lack of specific guidelines in military health facility planning literature as well as the lack of civilian literature's direct applicability or unified approach to planning a TMC necessitates dependence on the author's health facility planning experience, experiences of other health facility planners as well as general literature supported health facility planning guidelines.

The development of a methodology for planning a troop medical clinic must encompass many aspects and considerations and must evolve into a clear, concise process which can be readily understood and even modified to accommodate the needs of the many Army installation medical organizations. Thus, the goal of this study is to develop such a methodology. In order to achieve this goal, the researcher must provide insight as to the current planning environment; develop a conceptual framework in which the methodology can be applied; develop and explain the methodology and, finally, in order to provide a concise usable document, collect and display the methodology in one booklet which can be disseminated for use.

FOOTNOTES

¹Joint Commission on Accreditation of Hospitals, Accreditation Manual for Hospitals, 1981 ed. (Chicago, Ill: Joint Commission on Accreditation of Hospitals, 1980), pp. 54-55.

²Emily Friedman, "Public Press: Costs Become Major News," Hospitals 52 (April 1, 1978), p. 143.

³U.S. Department of the Army, Army Medical Treatment Facilities - General Administration, Army Regulation 40-2, p.1-1.

⁴Telephone interview with Major Kenneth S. Moro, Health Facility Planning Agency, Washington, D.C., 13 January 1981.

⁵Most notably, Army Regulation 415-15 (Military Construction, Army (MCA) Program Development) which provides for the majority of the documentation requirements.

⁶Telephone interview, Major Moro, op.cit.

⁷Telephone interview with Mr. Ross Brown, Oklahoma State Health Planning Commission, 24 March 1981.

⁸William Galvagni, "Local vs. Regional Planning, A Delicate Balance," Hospitals 52 (November 1, 1978), p. 78.

⁹Charles L. Breindel, "The Myth of Micro and Macro Health Planning," Hospital and Health Services Administration (Special I, 1980), pp. 38-47.

¹⁰James O. Hepner, Ed. (Case Studies in Health Administration, Vol. I), Health Planning for Emerging Multihospital Systems, (St. Louis: C.V. Mosby Co., 1978), p. 51.

¹¹Rex Whitaker Allen and Ilona von Karoli, Hospital Planning Handbook, (New York: John Wiley & Sons, 1976), pp. 14-15.

¹²Allen D. Spiegel and Herbert H. Hyman, Basic Health Planning Methods, (Germantown, Md: Aspen Systems Corp., 1978), p.14.

¹³James A. Rice, "Interinstitutional Planning Process, Part 1, Free Standing Hospitals," Hospitals 54 (July 1, 1980), pp. 53-56.

¹⁴LTC Thomas A. Janke, "How to Manage (Practically) Anything - Systematically," U.S. Army - Baylor University Bulletin of Continuing Education (Fall and Winter 1979), p.3.

¹⁵Lawrence Zelner and Barry Badner, "An Engineer's Approach to Data Collection and Planning," Hospitals 53 (March 1, 1979), pp. 62-64.

¹⁶Frank W. Rees Jr., "Mathematical Modeling Can Identify Space Needs," Hospitals 54 (December 16, 1980), pp. 109-112.

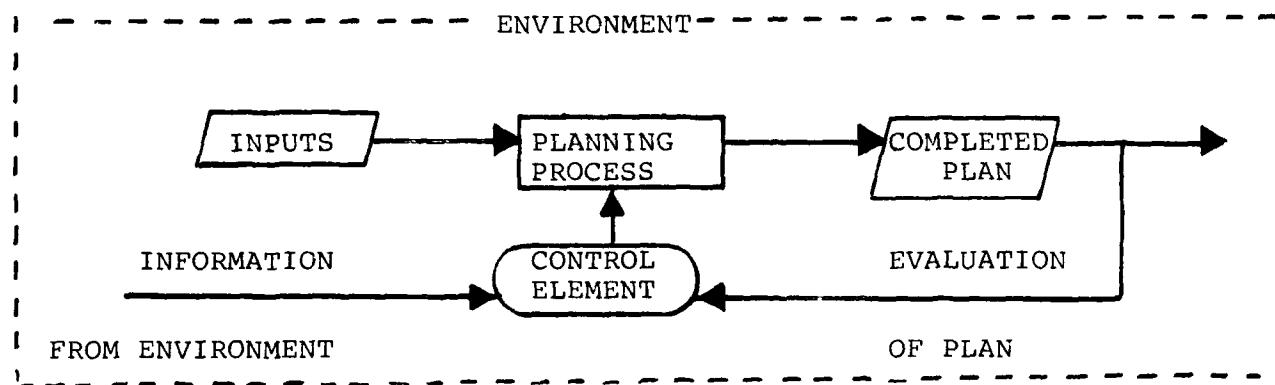
¹⁷Owen B. Hardy and Lawrence P. Lammers, Hospitals, The Planning and Design Process, (Germantown, Md: Aspen Systems Corp., 1977)

CHAPTER II

THE ARMY HEALTH FACILITY PLANNING ENVIRONMENT

The TMC Planning System

Development of a health planning methodology for the Army troop medical clinics must be prefaced with an understanding of the existing environment in which this planning is to be conducted. If one were to visualize the TMC planning process as a system, then the process could be represented as follows:



Systems Approach to Planning

figure 2-1

This schematic clearly demonstrates that the project's inception (inputs) would initiate the planning process (methodology) which would result in a plan for project implementation. There would be continuing evaluation of the plan and some additional inputs from the environment (perhaps in terms of philosophical

change or concerns about the larger issue of health care delivery systems to all beneficiaries, etc.). This evaluation and information from the environment would be accommodated via some cybernetic (control) mechanism and which would affect the system. The entire system is, in turn, embedded in a particular environment. One cannot operate a system of any type (particularly a health care system) without acknowledging the peculiarities of that environment and without understanding the influences of the environment on the system.² The impact of the environment, the levels and casts of characters involved with respect to health facility planning as well as the actions, interface and intercourse among the various levels and casts of characters is of paramount, elemental concern.

Levels and Cast of Characters

The Army's health facility planning system is designed in a hierarchical manner. At the lowest level of the hierarchy, the installation level, the Medical Department Activity (MEDDAC) is the primary actor. Next in line is the major medical command (such as Health Services Command) and, at the apex of the hierarchy is the Army Surgeon General's health facility planning agent, the Health Facility Planning Agency (HFPA). Lest it be perceived that these are levels of command or power, it should be understood that while they may parallel command and authority hierarchies, the system is envisioned to be one in which ever-broadening review, evaluation, and prioritization levels operate. The

ultimate decisions and priorities being formulated not by any one planning body, but by the inherent responsibility and authority of the Army Surgeon General.³

The relationships are not as simple and finite as they appear. Further investigation of the topic and the system leads one to perceive certain planning interrelationships and dependencies operating across all levels of the planning system much as a matrix organization would, theoretically, operate.

Actions, Interface and Intercourse

The various levels of planning have certain delineated functions and responsibilities. At the installation level, the installation medical organization, MEDDAC or MEDCEN is, indeed, the originator of a proposal for construction of medical facilities. There is some stimulus which initiates planning activity which, in turn, generates appropriate documentation and justification for the project. This documentation, after coordination with the installation's planning body (master planning committee, etc.) is forwarded to the second level of the health facility planning process, the major medical command. In essence, the institutional level has accomplished the micro health planning activity and the major medical command is to address the macro planning issues.

At the major medical command level, the facility construction proposals are collected from the many supported MEDDACS/MEDCENS, reviewed, evaluated and prioritized on the basis of need

and the major medical commander's master plan for health facility construction/modernization. This macro planning essentially involves the examination of all inputs and the evaluation and prioritization of the MEDDACs/MEDCENS micro planning efforts. The major command, having completed its level of health facility planning, forwards the results to the Army Surgeon General where the HFPA is the action element.

At this global level of Army health facility planning, the HFPA reviews, evaluates and assists in the prioritization of numerous inputs from all of the major medical commands. The documentation for each project is scrutinized and validated to ensure it is accurate, appropriate and complete. Within the Office of the Surgeon General, there is a prioritization process. After this process, the Army Surgeon General must then participate in an Army prioritization process whereby the medical construction requirements are incorporated within the overall Army construction program. In addition to these actions, the HFPA addresses the actual space planning and design of the health care facilities.

The HFPA has the added responsibility of providing the technical expertise for space planning for those projects approved for and incorporated into the Army Construction program. When a project is scheduled for construction, a utilization and requirements document is generated. This document consists of a detailed outline of the specific numbers and sizes of spaces in the planned facility ; guidance concerning

special requirements for design and construction (such as the type of equipment, type of electrical, mechanical and other services needed); notes concerning designed room capacity, staffing needs, special situations; and, finally, a description of how the facility is to be operated (eg hours of operations, services to be provided etc.). As can be seen, this process necessitates extensive communication between the installation level and the HFPA organization; there is an overlap of interest and responsibilities in the planning process.

In addition to the aforementioned actions, the HFPA is also intimately involved in the approval, design and construction processes⁴ providing review and technical advice throughout the developmental process. It is crucial that the HFPA receive input from the installation and major medical command levels throughout this process. In short, it becomes increasingly apparent that the involvement of all levels must approach some degree of symbiosis; each element's depending on another for collaboration throughout the developmental process in order for that project to come to fruition.

In the final analysis, the planning process for Army health care facilities is by no means conducted in a vacuum; rather, it is conducted in a dynamic environment which constantly receives various stimuli which affect the project's progress. Planning must be done carefully, with considered coordination and with the realization that the environment is, ultimately, the determining factor in the efficacy of the project. The

installation medical organization must not only be able to utilize a planning methodology which would facilitate the effectiveness and efficiency of a proposed project, but it must be predisposed to the application of such a methodology. It is the cultivation of an environment, conducive to planning, which must be a precursor to the effective use of a proactive planning methodology.

FOOTNOTES

¹LTC Thomas A. Janke, "How to Manage (Practically) Anything - Systematically," U.S. Army -Baylor University Bulletin of Continuing Education (Fall and Winter 1979), p. 3.

²Ira H. Schezinger, "Ongoing Transition is Forecast for Hospitals," Hospitals 54 (January 16, 1980), p. 63.

³Interview with Major Kenneth S. Moro, Health Facility Planning Agency, Washington, D.C., 13 January 1981.

⁴U.S. Department of the Army, Army Health Facility Design, Technical Manual 5-838-2, p. 1-1.

CHAPTER III

TMC HEALTH FACILITY PLANNING - A PRESCRIPTION

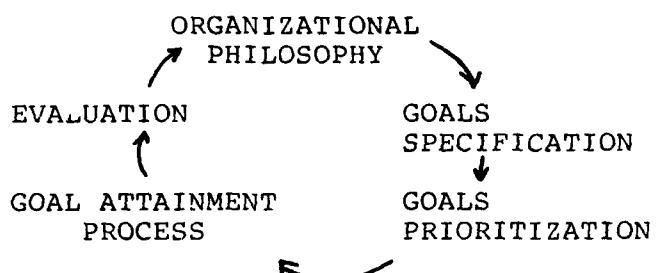
The Preliminaries to Utilizing A Planning Methodology

As with any art or science, there are the omnipresent health planning authors and experts who readily provide their readers and customers with various paraphrenalia which will ostensibly insure that nothing is omitted; that the action taken by the user will be appropriate and will provide the right tool for the planning job. These learned and experienced persons have certainly contributed greatly to the knowledge base and experience of the health care facility planning community; however, their astute work has not crystallized as far as its application to the military health care delivery system environment. Medical organization commanders and staffs, overwhelmed with requirements for documenting and justifying health care facility projects without having firm guidance or assigned expertise in this area, have little alternative than to effect crisis planning. That is, taking "planning" action on a particular project by completing the blanks in the appropriate forms with little or no formal health facility planning actions.

Prior to the utilization of any planning methodology, one must realize that there must be an environment for planning.¹

This means that the organization must cultivate an atmosphere wherein the organizational philosophy, goals and overall direction are known and that alterations of direction or goal attainment must be accomplished through concerted, calculated, planned efforts. The health facility planner is not per se the loci for the development of that planning environment. The environment must originate from those persons or groups who have the ultimate responsibility and authority for the delivery of health care services.² Within the context of the Army (AMEDD), the medical facility commander has the responsibility for efficiently utilizing his resources; thus, by corollary, the commander, in his effort to insure his basic facilities are appropriate for efficiently utilizing his resources, is responsible for cultivating the environment for planning. Unfortunately, the delineation of responsibility does not automatically promote the environment for planning. The commander and his staff must cooperate and work to insure the organization as a whole has this environment as a common element. The environment for planning upon which the health facility planning methodology is predicated can be cultivated by the identification and dissemination of the operational and overall philosophy of the organization. This philosophy determination and development may take many forms and may be manifested through many mediums. However, demonstration and publication of the organizational philosophy (particularly with respect to planning) must precede any planning effort.

The precursor of applying the health facility planning methodology is, simply stated, direction. This direction is most appropriately distilled from the crystallization of the health care organization's philosophy and resultant goals. If one were to examine the philosophy-goal-action process, it is probable that it would appear as shown below:



Philosophy-Goal-Action Process
(Adapted from Blum's book: Planning for Health, p.322)

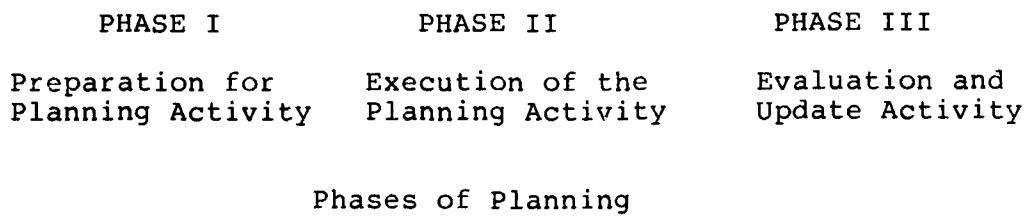
figure 3-1

The crystallization of organizational philosophy precipitates identification of supportive goals. These goals are prioritized and at this juncture there must be the initiation of some planning process which will result in goal attainment. The cycle continues, resulting in an evaluation phase in which the organization continually scrutinizes its actions / philosophies to insure concordance with its surrounding environment. The process by its very nature is iterative and self-sustaining; failure at any link may well incur discord and confusion internally and, perhaps, externally.

The planning process, although pervasive throughout the cycle, has its greatest manifestations during the goal attainment activity phase. If, for example, one element of the philosophy of the military health care organization is to provide maximum health care to active duty military members in decentralized, ambulatory settings, one goal may be to modernize and/or construct appropriate satellite health care clinics (TMCs). Within the priority parameters, the planning process or goal attainment activities would necessarily be initiated. Some organized planning process (rather than filling in the blanks on a construction request form with opinion data) must be developed and applied.

The Planning Process

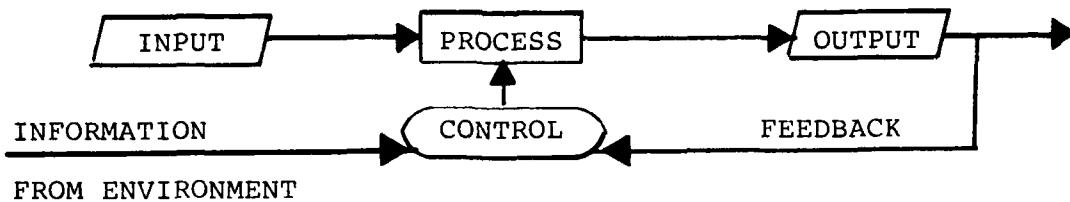
Recurrent themes in literature addressing health facility planning appear to embrace three elemental categories of activity: preliminary actions which require the organization to develop and examine philosophies, goals and objectives as well as create (or facilitate creation) of an internal planning body; a manipulation of some planning methodology or action which will culminate in a health facility plan; and, lastly, some type of evaluation and update action which examines the plan and, with additional information/guidance, can affect certain changes in the developed facility plan. Therefore, these three elements of phases (figure 3-2) can begin to be used as the skeletal portion of the troop medical clinic planning methodology.



Phases of Planning

figure 3-2

Each of the phases, although interrelated, are truly miniature systems which have certain inputs, accomplish certain actions through a specific process and produce specific outputs. Additionally, each of these systems have a cybernetic or control mechanism which takes feedback from the outputs and information from the environment and effectively fine tunes the system's operation. This miniature system can be depicted as follows:



Systems Model

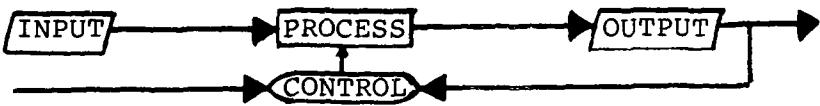
figure 3-3

Thus, it can be seen that each of the three phases consist of systems which function to accomplish specific purposes. This concept is depicted by figure 3-4.

PHASE I: Preparation for Planning Activity



PHASE II: Execution of the Planning Activity



PHASE III: Evaluation and Update

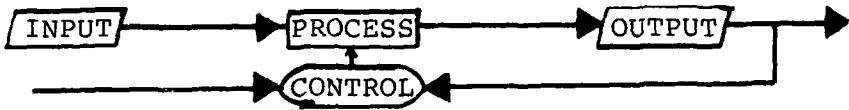
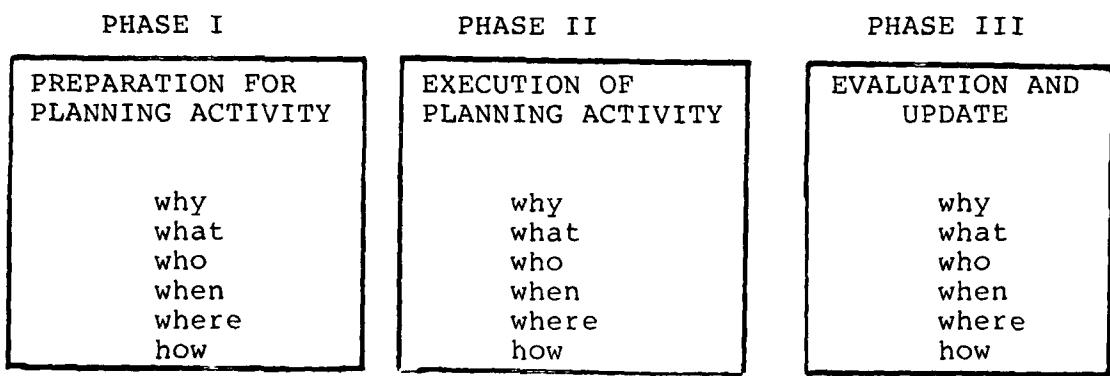
Phases of Planning and
Their Systems

figure 3-4

In planning any health care facility, or in the execution of any planning activity, one must insure the entire subject is adequately addressed. While numerous authors offer various approaches, the traditional approach taken by news reporters may well be one of the most tried and proven. This approach demands that the planner address the questions of why, what, who, when, where and how.³ While there may initially be some concern about potential applicability and redundancy of these questions, one must realize that these are interrelated elements of any planning issue; although some question(s) may not need to be addressed directly, each is certainly appropriate for consideration in each of the phases and are, indeed, the essential interrogatives to be addressed within each of the process components of the respective phases' systems.

By carrying forward the concept of utilizing the traditional news reporter's questions into each of the proffered planning phases, it can be seen that there is a continuing inquiry process in a health facility planning methodology. Schematically, the processes can be represented as:



Planning Phase Processes

figure 3-5

The use of the conceptual framework allows the organization to approach the planning task logically and with some degree of assurance that the final planning documents (along with the research documentation) will be both appropriate for the needs of the organization and comprehensively address germane issues.

Phase I - Preparation for Planning Activity

In this first crucial phase of the planning process, the installation medical command's leadership must establish direction to a specific planning machinery. This necessitates utilization of certain inputs such as organizational philosophy,

goals, mission, various data and information concerning the proposed project as well as available resources which will be allocated to the planning effort. Once these inputs are gathered/addressed, the organizational leadership can enter into the process component of this phase's system and address the elemental interrogatives.

In the preparation phase of the TMC planning methodology, addressing the elemental interrogatives (why, what, how, who, when, where) is extremely crucial to the overall planning process.⁴ Although this paper suggests an order for addressing the elemental interrogatives, it should not be construed that there is but one sequence. The individual situation will obviously dictate how the planning process is approached. The important facet is to insure that each of the interrogatives are, indeed, addressed. The interrogatives themselves leave little to the imagination or interpretation and certainly do not require extensive discussion; however, some treatment of each interrogative may facilitate the use of the planning process.

WHAT: What is to be planned? While the question may appear to be academic, one must certainly begin any activity by identifying the target or subject. It is extremely appropriate that the organization's leadership units (eg. the command section/the executive committee, etc.) clearly identify what it is they are trying to address. The efficacy of this target, then is subsequently addressed by the question "Why?"

WHY: Why must this planning process be conducted and why is the proposed facility needed? The organization's leadership should concern itself with insuring that the planning activity is necessary and that the proposed facility is, indeed, required. The planning activity may not be necessary if after considering the need for the proposed facility in light of existing resources/capabilities or other aspects, the facility is deemed unnecessary due to the potential capabilities of the existing resources or through the reorganization of those resources/operations. The organization's leadership should examine existing resources (including potential changes to the organizational structure/delivery system) and determine whether or not there is a need for the planning activity for the proposed facility. If the leadership determines through scrutinization of data/information that the proposed facility is unnecessary, appropriate action can be taken and the planning process for planning the proposed facility can be terminated. On the other hand, if the leadership is uncertain as to the efficacy of the proposed facility then the planning process may continue with special emphasis (direction) being given to the planning body (to be designated during Phase I) to closely examine the efficacy issue. Of course, if the leadership perceives that the project is appropriate, then they would sanction the planning committee to undertake the planning process.

WHERE: Where does this project lie in the priority listing of the organization? The leadership must certainly address

this issue in order to appropriately allocate the resources to the effort and to begin consideration of the timing requirements.

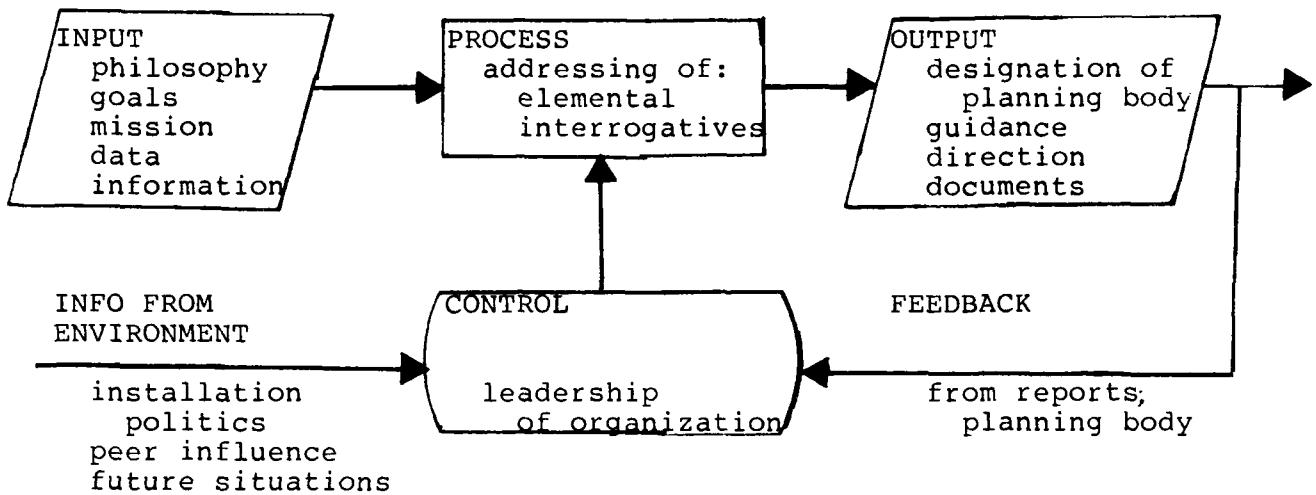
WHEN: When must the facility be completed and when must the planning be completed? There are many considerations at this point. The leadership must be cognizant of the Army's MCA (Military Construction, Army) funding and design schedule constraints, the needs of the population supported, as well as the length of time it will take to complete the planning process considering the resources allocated to the project. It is during consideration of this interrogative that the leadership may need to create a general time frame outline for the planning process. This leads to another interrogative: "How will the planning be accomplished?"

HOW: How is this planning to be conducted? Since this paper concerns itself with a planning methodology, the obvious answer would be: "By the application of the planning methodology proffered herein!" However, one must appreciate that whatever method or tact is followed, the planning body must consider all elemental interrogatives in the planning process.

WHO: The answer to the question "Who will comprise the planning body?" is extremely variable. Involvement of administration, nursing services, and clinical services personnel is mandatory⁵ in order for a comprehensive, co-operative treatment of planning issues. The inclusion of a person or persons with formal planning education/experience is obviously desirable. Within the Army Medical Department,

the procurement of organizational personnel who are schooled/experienced in planning processes to be a member of the planning body normally involves the conscription of a member of the logistics division of the organization who has hopefully had some experience in the planning process (either in the documentation process or the actual conduct of the planning activities). This is normally the case due to the historical link and dependence on the logistical personnel for effecting documentation concerning facilities and real property. Indeed, the training of the medical logistician with regard to facility maintenance and documentation makes this individual a very attractive candidate for committee membership. The formulation of committee structure(s) is certainly appropriate to provide input on the multifaceted planning process. The functions of the committee (planning body) should be specified and they should be appraised of the dynamics and iterative nature of the process.⁶ The AMEDD's options with respect to obtaining consultants normally are extremely limited; however, this option should not be summarily ignored. Consultants have the advantage of providing some degree of objectivity with respect to the planning process for a particular institution and, along with their experience and credentials, are able to often consider many aspects which are not normally seen by hospital employees and staff. In the final analysis, the "Who" question must be answered after due and careful consideration of other elemental interrogatives as well as the assets available.

It is easily discerned that this phase begins the actual planning process by addressing a concept; assimilating information/data; answering specific elemental interrogatives and ultimately providing direction and guidance to a specific planning body which will be responsible for developing appropriate plans to be submitted for approval and action to the organizational leadership. Phase I has considered certain inputs (information and data); acted on elemental interrogatives through a process; and produced an organization for planning activity as well as specific guidance concerning that planning activity. The phase has also included a control element, the organizational leadership, which has continually monitored the output and the process actions and has been able to effect some changes (or reconsiderations) during the answering of the elemental interrogatives. Finally, the control element (the leadership) has, undoubtedly, been influenced in their examination of the interrogatives and development of the planning body and its directions by factors from the environment such as peer pressures, future forecasts from the installation and involvement of other elements of the environment in which the leadership operates. This whole phase can, therefore, be described through the systems approach. Schematically, the Phase I would appear in a systems model as follows:



Phase I Systems Model

figure 3-6

It is within this system's framework that each phase is to be described. The system's framework provides a skeletal system which can be seen to support the scrutinization of the elemental interrogatives as well as the formation of a structured yet flexible environment for the planning body's activities.

Now that the leadership has been able to obtain and process inputs through the mechanism for consideration of the elemental interrogatives and to develop an output of the planning body and its directions, the next logical step is to continue with the planning process and begin the actual planning activity.

Phase II - Execution of the Planning Activity

The second phase of the planning process is one of the most arduous, time consuming and detailed of all the phases. It is at this juncture that the project begins to emerge from

the amorphous mass of philosophy, numbers, opinions and other inputs into a semi-solid researched project proposal which addresses the needs of the organization and the patient population.

The execution of the planning activity, again, demands attention to the six tenets of news reporting. Although not as clear-cut as the process in Phase I, the questions in this phase center about the issues of requirements, impacts and locale. The output of this system can be described as "the plan." This phase can also be described in the systems format where the inputs take the form of data and information as well as the organization, directions and guidance from Phase I; process takes the form of activity to answer the elemental interrogatives; and the output, the facility plan expressed in the form or written documentation in accordance with appropriate Army regulations/formats. The feedback information from the environment and the control remain essentially the same as in Phase I.

Lest it be assumed that the data/information will suddenly appear, one must realize that inherent within the process phase of the system is the requirement to amass and assess the appropriate information/data required to address the pertinent questions. This inherent necessity is often overlooked or is seen as an obstacle to short sighted planners who are stymied by the lack of concrete information. This aspect should not be seen as insurmountable. Often, the best "estimation" is necessary to overcome gaps in data and/or data voids.

Therefore, the inputs to the system during this phase of the planning effort can be seen to consist of information and data as well as the guidance from the Phase I and the planning body's organization. Again, the process portion of this phase consists of examination of the elemental interrogatives: when, who, where, what, how and why.

WHEN: When is the project to become reality and be operational? This parameter must be the first to be addressed as many factors are contingent on the time element. Population projections must be made to some future known point in time. The impact of this project and other envisioned projects must be adequately addressed. If, for example, an installation is planning for the construction of a barracks and training facilities in a new area, then it is logical that the planning for the troop medical clinic to support that new location be planned in such a manner so as to coincide with the area's construction and occupancy times. Construction of a support facility too early may result in wasted resources; construction too late may result in less than optimal health care delivery and, again, wasted resources (perhaps in the form of lost man-hours for patients due to travel time to other functioning health care facilities or inappropriate utilization and upkeep of a facility not originally intended for medical use). In any event, the planning time parameters must be determined. The planning body must be aware of the planning cycle of the MCA program (Appendix C) and work toward timely submission of the appropriate documentation in accordance with Army

Regulation 415-15 and guidances from senior organizations. Generally it is best to develop a planning time table based on the occupancy date requirement, the project funding and design constraints and data collection/analysis/planning time requirements.

For illustrative purposes, consider a situation where an installation is planning to construct and operate barracks and training facilities in a newly opened (developed) portion of the installation by 1990. Through various mechanisms, the installation medical organization is made aware of these plans and initiates its planning activities. In order to adequately plan medical facilities, the planning timetable could be developed. An example of such a timetable is shown at figure 3-7.

Although there are many variables, the idea should be clear. The medical organization and the planning body should develop some type of planning pathway or milestone which can be used a a guidance for the planning process.

The question of "when" is therefore, one parameter which must be readily addressed by the organization so that the planning efforts may be both timely and appropriate.

WHO: The question, "Who is to be supported?" is of misleading simplicity and has often resulted in false assumptions and inappropriate facilities. For example, two TMCs each supporting three thousand people may at first glance appear to have the same needs in terms of size and services offered; however, if one supports a basic training unit and the other

<u>Time Periods or Expected Deadlines</u>	Action	Notes/Remarks
4/88 - 10/90	Construction Activity	# 1
10/87 - 3/88	Construction Award	# 2
10/86 - 10/87	Final Design	# 2
10/85 - 9/86	Design Process	# 2
10/84 - 9/85	HFPA Planning	Phase III # 3
3/84	Resubmission/Update	
3/84	Resubmission/Update (Annual Requirement)	
3/82	Submission HSC	# 4
2/82	Final Medical Organization Approval	# 4
10/81 - 2/82	Final Plan Development	# 5
5/81 - 4/81	Data Collection	Phase II # 5
10 - 12/80	Planning Preliminaries	Phase I # 5

Note #1 This example assumes a 2½ year construction time; obviously the type and scope of facility will greatly impact on this period. Therefore, the medical organization must seek advice concerning the amount of construction time expected for a specific type/scope of project.

Note #2 This period will vary in amount of time required; however, the amount of time shown is typical.

Note #3 This is the period of interaction with the OTSG health planning organization, the Health Facility Planning Agency (HFPA).

Note #4 The expected deadline date is used merely as an example.

Note #5 Again, the amount of time required depends on the type, scope and availability of data/resources.

Sample Planning Timetable

figure 3-7

supports a senior headquarters organization there may be seen some significant differences. The basic trainee unit may generate a large number of podiatric, orthopaedic and respiratory ailments; the senior headquarters organization may generate fewer of these ailments but more internal medicine problems. Thus, it is apparent that not only are numbers of persons to be supported important, but the usage rates (by type of service) of these persons is certainly a factor to consider in the planning process. In attempting to plan for a TMC, the planning organization must know something of the population; not only in numbers but by type of organization supported. This is obviously elemental to discerning what types of services are to be provided to that supported population. The planner can usually ascertain the future population anticipated by organization type and numbers through the installation Directorate of Personnel and/or Directorate of Plans and Training.

WHERE: Although the planners have developed the projection of how many and what type of population is to be supported by the TMC, it is particularly important to insure that this facility is appropriately located. Generally, the location of the TMC should be central to the population which it supports. This necessitates the planning body to interface with the installation's master planning elements (normally, within the Directorate of Facilities Engineers) to consider the population location (both work and billeting locations) as well as transportation routes (existing and planned) leading to

and from the area as well as within the area. Consideration should be provided to accessibility, communications (to the TMC and the installation's main health care facility) and modes of transportation (bus, taxi service) available to patients and TMC staff. Routes and travel distances for logistical, administrative, and emergency medical support must be examined. Essentially, the planning body must examine not only the location of the TMC with respect to the population supported but must also consider many adjunct facets and may even be obliged to recommend changes in transportation routes, etc. to the installation planners.

WHAT: The next step in the sequence of events may well be the consideration of what services should be provided to the supported population. Although dogma as espoused by various military regulations and other guidance documents may specify typical types of services at specific categories of facilities, there is nearly always some latitude. It is incumbent on the planning body to openly address the requirements of services to be provided at the planned facility even though the dogma may seem to indicate that only specific services are "typically" provided at a certain type of facility.

Once the planning body has established the population to be supported by the future facility, it is appropriate to examine the historical usage rate of that population in order that the future may be predicted. While there are numerous methods for determining need (and/or demand) for health care, a variation of the "rates under treatment"

approach is recommended for application due to its simplicity of use and relative availability of data. This approach merely develops the rate at which a certain population has utilized a service and then applies the usage rate to the similar future population to discern a projected workload. This method requires that the planner take the mean (average) historical population for a particular period in time (eg. for two or three fiscal years) and divide this figure into the number of visits (or laboratory procedures , radiographic exposures or whatever is being investigated) for the same period as addressed for the historical population. The resultant figure is the usage rate (historical usage rate) for the historical population. This usage rate is then multiplied by the forecasted population to obtain a projected usage for the particular service being investigated. For example, if Fort Blank has a TMC which supported three thousand basic trainees (mean figure for three consecutive fiscal years) and there was a mean of 12,000 clinic visits during the same period, the historical usage rate would be computed by:

12,000 clinic visits
(mean number of visits
for FY1,2,3 at TMC #1)

3000 trainees supported
(mean population supported
for FY 1,2,3 at TMC # 1

= 4000 annual visits per
thousand population
supported at TMC #1

Then if there was a projected population of 4000 trainees at some future date, the clinic visits could be projected as:

4000 annual visits (historical usage rate)	X	4000 trainees to be supported	= 16000 annual clinic visits projected for anticipated population
-----------------------------------------------	---	----------------------------------	-------------------------------------------------------------------------------

Thus, the planning body can see that this usage rate method allows projection of any workload for a specific population. There are some inherent limitations of this method which must be recognized. This project model assumes that: the historical usage rate will continue to be mirrored in the future for a specific type of population; that the medical elements' health care delivery policies will remain constant. If there are changes in these factors, then the projection model must be altered accordingly. While far from perfect, this usage rate method offers the planners of the TMC a relatively easily used tool for projecting future demands on a proposed health care facility.

With usage data the planning body can examine historical trends, couple that information with the organizational philosophies and goals and mission and address the specifics of services to be provided as well as the impacts of providing these services at the proposed facility. Will the proposed TMC plan include some limited facilities for laboratory, pharmacy, radiology, physical therapy or other services? What will be the impacts of providing these types of services at the proposed TMC? Will the provision of these services at the TMC reduce "lost time" by patients; will it impact on staffing, maintenance, logistics and/or other facets of the main installation health care facility? Each of these questions must be considered by the planning body to insure that the resultant plan is as appropriate as possible.

After service parameters have been determined, the planning body must project workload levels anticipated in each of these areas. Generally, the planning body can project this information in the rates under treatment manner as was done to project overall workload. Experience factors for each type of specialty service (eg. radiology, pharmacy, etc.) can normally be gathered from the records of these departments in the main health care organization or from senior medical organization's resources. The point is to obtain projected workload information for the future population to be supported in order that staffing and space data can be created.

Thus far, the planning process has addressed the when, where and what interrogatives. The facility plan has begun its crystallization; at this juncture, it is important for the planning body to develop the concept of operation. That is - How will the facility operate?

HOW: The planning body has thus far developed a general sketch of services to be provided to a future population and has generated parameters of anticipated workload; however, it is at this point that the planning body must address the "how" interrogative. At this time, the hours of operation, days of operation, staffing, general communications requirements, logistical requirements, patient access and disposition must all be addressed.

The hours and days of operation are probably the easiest subjects to address. These are normally established pursuant to the medical organization's mission, philosophies and goals

as well as is necessary to render support to the beneficiary population. The planners must consider these items and determine what hours of operation are most appropriate to provide adequate access of and service to the supported population. The major medical organization's command and staff structure will often provide definitive guidance with respect to this area.

Logistical, communication, and administrative support requirements must also be developed at this point. How will the TMC be supported in these areas? Will the TMC have/need organic administrative and logistical services or will these elements be provided by the MEDDAC/MEDCEN? What will be the requirements for communications? Will the TMC require radio communications or merely commercial telephone service? The planning body must examine the flow of medical records/information. How are records to be maintained? Will the supported population's medical records be maintained at the TMC? What will be the mechanism for referring patients to the MEDDAC/MEDCEN in terms of transportation, control and return of patients and medical records? The planning body must ascertain if patients will be referred to specialty clinics in the main health care facility or will specialists be available in the envisioned TMC during certain days of the week? These questions are merely a sample of the types and number of questions to be addressed at this time. The specific type of question and number of questions will vary from circumstance to circumstance.

Once the operational plan of the facility is determined, this plan must be coupled with the staffing element. Although often omitted in initial planning stages, it is particularly important that the facility plan include some treatment of the number and type of staff required to operate the TMC so that programming (through force development channels) can be effected so as to insure adequate staff is available at the time of opening of the facility. In order to determine specific staffing requirements, the planners should utilize Army staffing guides (DA Pamphlet 570-557); previous manpower survey and documentation sources for similar facilities; guidance from the MEDDAC/MEDCEN force development section; the operational concept; projected workload and finally, common sense.

WHY: The last question to be addressed in this phase is "Why?" Although the question may seem redundant since it was addressed in Phase I of the planning process, it is appropriate that the planners insure that the plan/tact developed thus far is truly the most appropriate. It may be discerned during the data collection and forecasting process that the provision of a TMC is not necessarily the most appropriate. The planning body has an incumbent responsibility to examine alternative methods for delivery of health care services and critically examine the efficacy of these alternatives. Various methods for evaluating alternatives exist such as cost benefit analysis; however, the planning body should consistently employ whatever technique is most comfortable and appropriate in a

particular environment. The application of complex, sophisticated analysis techniques can certainly be used by the planning body if there is available time, resources and knowledge. Yet, the common sense approach in discerning and evaluating alternatives is often just as useful as a relatively powerful mathematical or philosophical evaluation technique.

With the answering of "Why?" the planning body has neared completion of Phase II of the planning process. The remainder of activity at this juncture is to present the plan and any alternatives to the MEDDAC/MEDCEN command/staff element for final discussion and approval and then the completion of documentation as required by AR 415-15 and guidance from senior headquarters. Once this submission is complete, the planning body should not be dissolved nor should they perceive an end to their activity. The final phase, Evaluation and Update is one which insures changes, refinements and other inputs are continually annotated in the plan.

Phase III - Evaluation and Update

Once again, the systems model with its inputs, process, output and cybernetic mechanism is an appropriate representation of actions in Phase III of the planning process. The major purpose of this phase is, as the name implies, to periodically update the proffered plan as new data becomes available and to evaluate the plan to insure it will be the most effective and efficient method for delivering health care to the supported population commensurate with the MEDDAC/MEDCEN mission, philosophy and goals. Thus, in terms of the systems approach,

this phase may be pictured as is shown in figure 3-8.

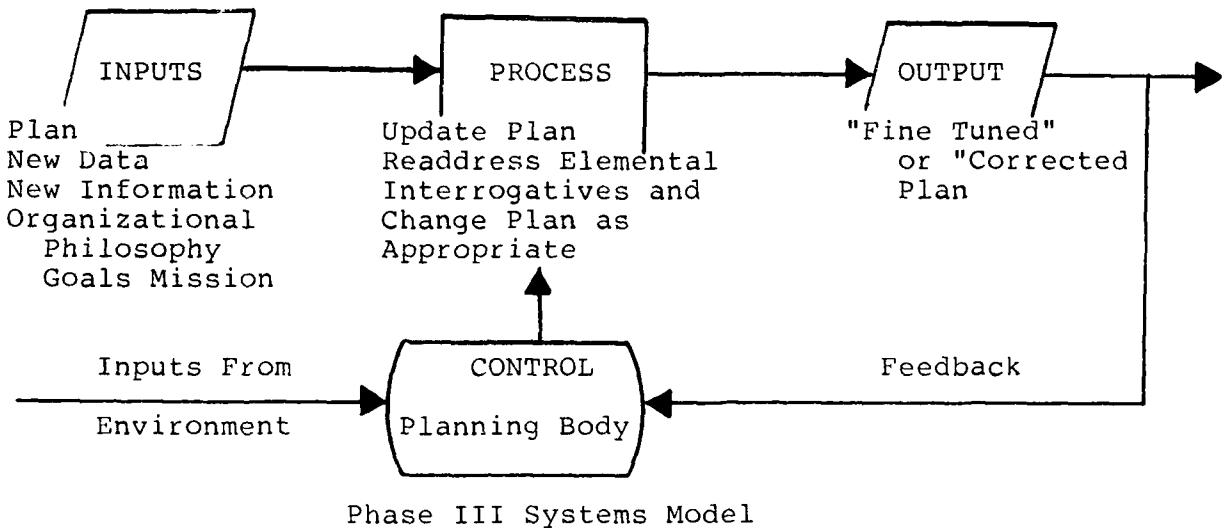


figure 3-8

EVALUATION: The evaluation portion of this phase includes not only the evaluation of data in the updating mechanism but it also includes scrutinization of the processes of Phase II and their reapplication in the updating process. The planning body must ask if it has truly appropriately addressed each of the elemental interrogatives as well as the larger question concerning provision of appropriate health care to the targeted population.⁷

This evaluation process is markedly different in its execution in each circumstance; however, in the final analysis, it must encompass philosophical and pragmatic considerations with respect to the conduct of a specific planning effort by a specific planning body. The results of the evaluation process (in whatever form is appropriate within a given planning environment) should be used by the planning body to improve the

current plan as well as to conduct future planning efforts.

It is an invaluable, essential part of the planning methodology.

UPDATING: The updating of the plan (an annual requirement) merely requires that the facility plans elements as required by AR 415-15 (and supplemental guidance from senior headquarters) be reexamined and validated. Reexamination of the elemental interrogatives in light of new/refined information is simply accomplished by the planning body. The planning body should certainly look closely at the historical workload figures in attempting to discern trend changes; these changes should then be used to refine predictions, examine services to be provided, staffing and size requirements, etc. The supported population projections must be reexamined as well as any changes in installation master planning, etc. The one area which is, of course, the organizational philosophy, goals and mission. If these change, the planning body must insure that the plan remains congruent with these fundamental elements.

As one can see, the updating activities are more than just changing a few numbers, it is truly a separate Phase III process. The importance of conducting the updating activities is obvious; it is this activity which insures the plan accurately reflects the needs of the proposed facility.

FOOTNOTES

¹Joseph P. Peters, A Guide to Strategic Planning for Hospitals, (Chicago, Ill: American Hospital Association, 1979), pp. 44-48.

²Ibid., p. 54.

³Allen D. Spiegel and Herbert H. Hyman, Basic Health Planning Methods (Germantown, Md: Aspen Systems Corp., 1978), pp. 251-253.

⁴U.S. Department of Health, Education and Welfare, Hospital Outpatient and Emergency Services Functional Programming Guidelines, p. 9.

⁵Judy Grubbs et al, "Bringing the Medical Staff into Hospital Planning by Sharing Data," Hospitals 55 (January 16, 1981), p. 73.

⁶William Galvagni, "Structured Evaluation is Key to Effective Planning," Hospitals 54 (August 1, 1980), p. 54.

⁷Ibid., p. 52.

CHAPTER IV

SUMMARY

The Army troop medical clinic (TMC) is one of the smallest installation health care facilities operated by the Army Medical Department (AMEDD); however, the planning effort which is the prelude to the actual facility is just as important and rigorous as any planning effort. Although there has been a proliferation of health care and health facility planning oriented literature published within the past decade and although there are Army organizations and organizational elements which are charged with the responsibility of coordinating, prioritizing, planning, monitoring and managing the health care facility planning and construction efforts for the AMEDD, the initial responsibilities for initiating project proposals (to include planning requirements) rest with the individual Medical Department Activities (MEDDAC) and Medical Centers (MEDCEN). While the responsibilities for planning proposed projects is at this basic level, the MEDDAC/MEDCEN normally have little if any specific guidance concerning how to conduct health facility planning ... in other words, there does not currently exist any comprehensive, universally applicable planning methodology for conducting health facility planning within the Army. Military literature, replete with directions for completing justification documents and specific

construction requirements is remarkably wanting of planning methodology guidance. The civilian literature, while prolific with regard to planning methodologies (of varying types, complexity and efficacies) are not truly universal in their application to the Army health facility planning arena. Additionally, civilian literature often reflects author bias and for every methodology proffered, there is at least one other methodology which is said by other authors to be "better." The mere act of researching various methodologies can truly be exhausting.

The problem was to develop a health facility planning methodology for planning for the elemental Army installation medical facility - the TMC. This paper has revealed such a methodology. One predicated on certain elemental interrogatives (why, when, where, what, who and how) and set within systems approach frameworks. The planning methodology has been segregated into three major blocks: Phase I - Preparation for Planning Activity; Phase II - Execution of Planning Activity and Phase III - Evaluation and Update. Each phase is set within the adaptable systems approach framework which considers: inputs (resources, information, data, etc.); a process mechanism (application/consideration of elemental interrogatives); an output (guidance, or a facility plan) and lastly, a cybernetic or control element (planning body or MEDDAC/MEDCEN Executive Committee). This entire systems approach is embedded in a specific environment which, of course, impacts on the system.

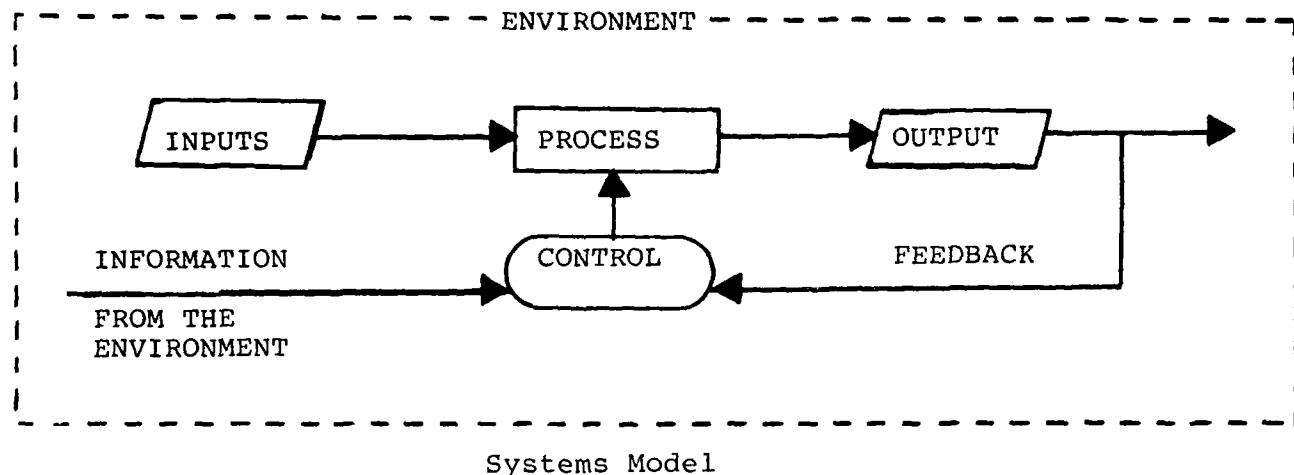


figure 4-1

The methodology framework, while relatively simplistic provides a universally applicable mechanism through which the MEDDAC/MEDCEN planning bodies can develop a TMC health facility plan which, when placed in the project proposal format as required by AR 415-15 and other senior headquarters' guidance provides necessary facility planning information for project programming at the highest AMEDD and Army levels while simultaneously providing additional planning concepts (such as operational plans) which can be used by the installation master planning activities, MEDDAC/MEDCEN force development planning efforts and in overall MEDDAC/MEDCEN operational planning efforts.

This paper has provided a general planning methodology for effecting planning for a TMC. (Appendix D provides a guidebook for using the process.) The phases of planning can most appropriately be utilized in an environment which is conducive to planning and which is predicated on the crystallization and expression of the organization's missions, philosophy and goals. Without these items, the organization's planning

body would not be able to adequately or appropriately plan a TMC or any other facility. The three phases of planning have been constructed in a specified, yet, flexible framework which must be adapted to the specific planning environment and situation. The elements of the planning phases must be applied judiciously, with contemplation and common sense. Rigorous application of this planning methodology without conscientious consideration of the environment is never appropriate.

APPENDIX A
DEFINITIONS

DEFINITIONS

TROOP MEDICAL CLINIC (TMC) - This term is used to describe a small, free-standing ambulatory health care facility located on an Army installation. The TMC as used in this paper may or may not provide minimal ancillary services (eg. limited pharmacy, limited radiology, limited physical therapy service, etc.) to the beneficiary population.

HEALTH FACILITY PLANNING AGENCY (HFPA) - This is a field operating agency of the Army Surgeon General's Office which is specifically charged with effecting space planning, design monitoring, budget advice, and construction coordination functions for all installation medical facility construction projects.

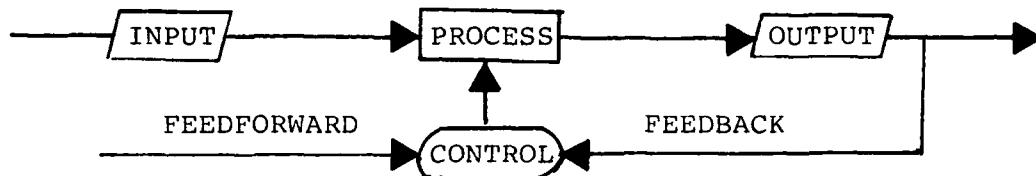
PLANNING BODY/PLANNING COMMITTEE/PLANNER - These terms are used interchangeably throughout the paper and are intended to describe the person or persons specifically designated to execute the planning activities.

NET SQUARE FEET (NSF) - This is an amount of usable square footage (floor space) which does not include allowances for wall thickness, mechanical equipment spaces or hallway space (circulation); also termed "functional space."

GROSS SQUARE FEET (GSF) - This is an amount of space which includes functional areas (net square feet), allowances for wall thickness, mechanical equipment space and circulation spaces; the total amount of space.

APPENDIX B
PLANNING PROCESS DIAGRAMS

PHASE I - PREPARATION FOR
PLANNING ACTIVITY



INPUT COMPONENTS:

- organizational philosophy
- goals of organization with respect to this project
- specification of resources

PROCESS COMPONENTS:

- determination of type of facility to be planned (WHAT)
- determination of necessity for this planning activity (WHY)
- determination of priority of this project (WHERE)
- determination of time periods involved (WHEN)
- determination of planning pathways (HOW)
- determination of participants in planning activity (WHO)

OUTPUT COMPONENTS:

- planning organization
- planning directions
- documents concerning the planning effort

FEEDBACK COMPONENTS:

- planning organization/action documents evaluation
- information from participants

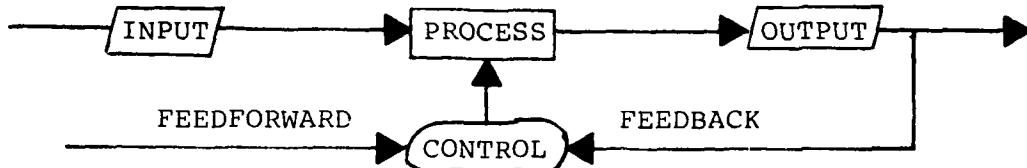
CONTROL COMPONENTS:

- organizational leadership

FEEDFORWARD COMPONENTS:

- information from the environment

PHASE II - EXECUTION OF THE
PLANNING ACTIVITY



INPUT COMPONENTS:

- planning organization from output of Phase I
- data/information (eg. population data, usage rates, etc.)
- planning resources

PROCESS COMPONENTS:

- determination of planning timeframe (WHEN)
- determination of supported population (WHO)
- determination of services, staff and space to be provided (WHAT)
- determination/consideration of location (WHERE)
- determination of operational concept (HOW)
- examination of alternatives (WHY)
- formulation/documentation of plan

OUTPUT COMPONENTS:

- facility plan documentation
- facility plan
- reports/records of action

FEEDBACK COMPONENTS:

- evaluation of efficacy of the plan
- information from participants
- information from staff and others

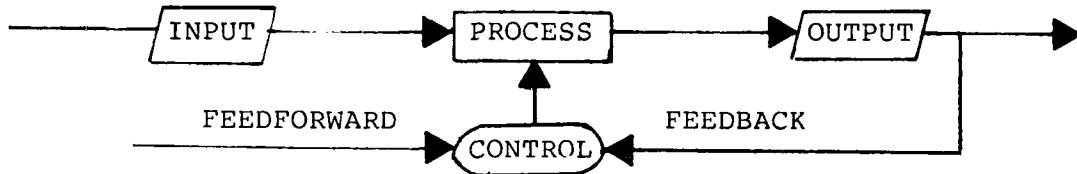
CONTROL COMPONENTS:

- organizational leadership

FEEDFORWARD COMPONENTS:

- information from the environment

PHASE III - EVALUATION AND
UPDATE ACTIVITY



INPUT COMPONENTS:

- planning organization from Phases I and II
- data/information from Phase II
- new data/information

PROCESS COMPONENTS:

- reexamination of planning timeframe (WHEN)
- reexamination/update of supported population type/size (WHO)
- reexamination/update of services, staff, and space to be provided (WHAT)
- reexamination/update of location of the proposed facility (WHERE)
- reexamination/update of operational concept (HOW)
- reexamination/update of alternatives (WHY)
- reexamination/update of plan

OUTPUT COMPONENTS:

- updated facility plan
- recommended actions

FEEDBACK COMPONENTS:

- examination of plan for continuing efficacy
- information from participants
- information from staff

CONTROL COMPONENTS:

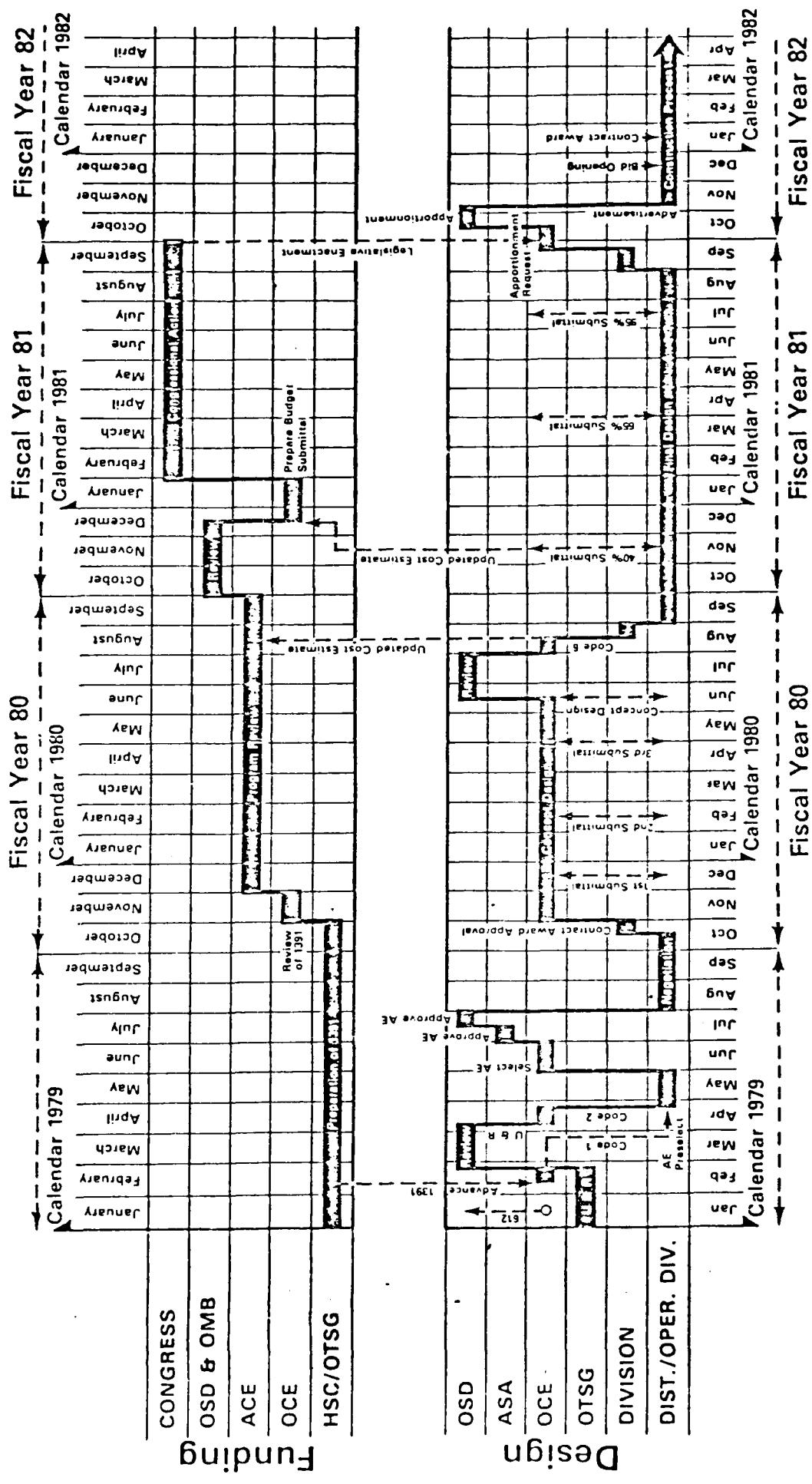
- organizational leadership

FEEDFORWARD COMPONENTS:

- information from the environment

APPENDIX C
FUNDING - DESIGN PROCEDURE CHART

Typical Station Hospital FY 82 Funding-Design Procedure Chart



APPENDIX D
TMC PLANNING METHODOLOGY GUIDEBOOK

PLANNING THE TROOP MEDICAL CLINIC
A PLANNING METHODOLOGY GUIDEBOOK

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CHAPTER I

GENERAL INFORMATION

PURPOSE: This document is designed to provide assistance to Army Medical Department (AMEDD) organizations in developing a health facility construction project - specifically, for a troop medical clinic (TMC) facility.

SCOPE: This guidebook addresses specific planning steps (methodology) which have been designed to address requirements/considerations appropriate for planning troop medical clinics. The process and principles espoused in this guidebook are specific for TMC planning; however, they may be adapted by the user for planning other types of health care facilities. This guidebook must be used in conjunction with Army Regulation 415-15 (Military Construction, Army (MCA) Program Development) and other senior medical command headquarters' guidance.

APPLICABILITY: The information contained herein is applicable to all installation AMEDD organizations located within the continental United States (CONUS). AMEDD organizations outside CONUS may also utilize this guidebook; however, these organizations should seek additional advice and assistance from their appropriate higher headquarters in order to incorporate unique planning situations into the proffered process.

CHAPTER II

THE PLANNING ENVIRONMENT

Creation of an Environment for Planning

Prior to utilization of any planning methodology there must be an environment which is conducive to the planning effort. Simplistically stated, the organization must encourage and support the proactive addressing of issues and situations; taking positive action on ideas and/or plans prepared by its organizational members. All organizations are faced with making decisions concerning the future. It is the inherent responsibility of the organization's leadership to foster an environment in which planning is accomplished. While there is no one particular method for creating and nurturing this planning environment, the organization may well begin such fostering activity through addressing the following elements in an open, organized manner:

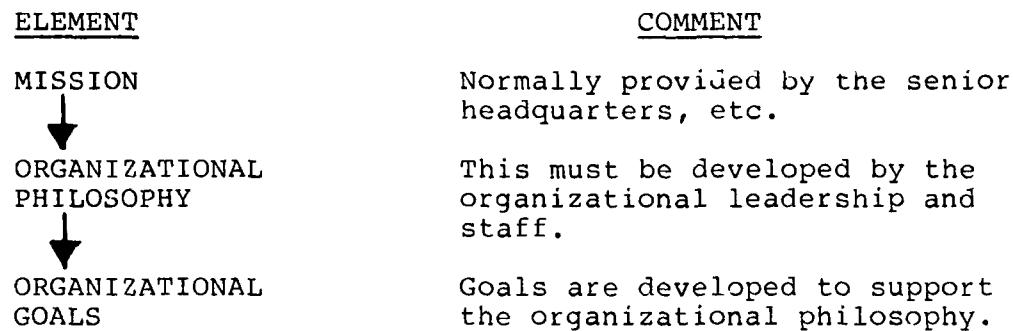
- Evaluation of Current Position/Posture
- Determination of Organizational Philosophy
- Examination of the Future
- Establishment of a Planning Mechanism

Through addressing the above issues, the organization can begin proactive planning action which is designed to enhance the organization's position.

Philosophies and Goals

The environment for planning must not only be supportive of planning activity, it must also contain some direction.

This direction is most appropriately distilled from the health care organization's mission, philosophy and goals.



Developmental Relationships

figure 1

Thus, it can be perceived that the creation of an environment for planning consists of a positive, proactive environment which realizes its direction, has appraised its situation and which is prepared to support the planning activities.

CHAPTER III

PLANNING METHODOLOGY

General

Various planning methodologies have been proffered by numerous authors; however, each seem to address three common elements: preliminary activities; planning activities; and evaluation/update activities. The planning methodology contained within this guidebook uses these three major activity areas or phases as its general framework.

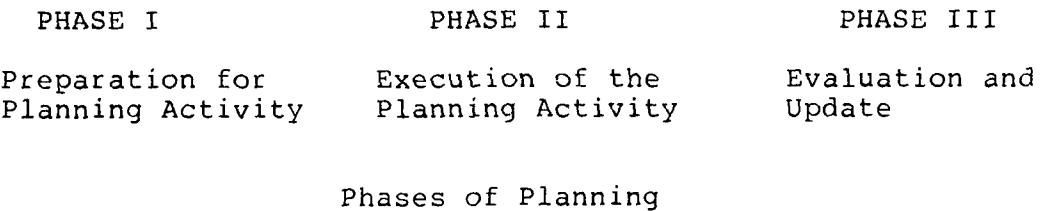
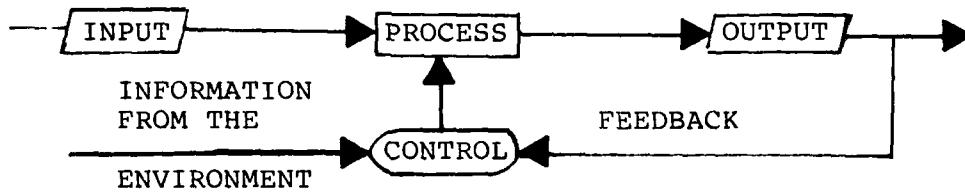


figure 2

Systems Concept

Each of the phases, although interrelated, is truly a miniature system which has certain inputs, accomplishes certain actions through a specific process and produces specific outputs. Additionally, each of these systems has a cybernetic (control) mechanism which takes feedback from the outputs and information about the environment and fine tunes the system's operation. Schematically, this can be presented as follows:



Systems Concept

figure 3

Thus, it can be seen that each of the three phases consists of a system which functions to accomplish a specific purpose. This concept is depicted by figure 4.

PHASE I: Preparation for Planning Activity



PHASE II: Execution of the Planning Activity



PHASE III: Evaluation and Update Activity



Phases of Planning and Their Systems

figure 4

Obviously each of the phases provides an output which becomes part of the input to the next planning phase. Additionally, each of the phases' process elements has common items which must be addressed in the planning activity. These common elements are the questions: who, what, when, where, why and how, or, more succinctly, the elemental interrogatives.

The actual application of this planning methodology must be accomplished in an environment conducive to planning and is, by its very nature a proactive mechanism. Each of the planning methodology phases and its respective systems components will be examined in the following chapters.

Use of the Guidebook

This guidebook is designed in an effort to present certain frameworks and questions for consideration by the installation medical organization's planning elements. Each planning phase is addressed in separate chapters with each chapter being divided into six major topic areas: general; input components; process components; output components; cybernetic components; and, lastly, an abbreviated description (schematic) of the phase. These topic areas address general facets/questions which must be researched, considered and/or acted on during the planning process. The issues and questions raised are certainly not inflexible or all encompassing; however, they are the elemental items to be addressed. While this guidebook provides a planning methodology, one facet, the project justification/documentation requirements are only mentioned. Users of this guidebook must consult Army Regulation 415-15 and other appropriate regulations/documents for specific documentation requirements.

CHAPTER IV

PHASE I PREPARATION FOR PLANNING ACTIVITY

General

It is during this phase that the organizational leadership must initiate the formal planning process. The ideals, amorphous concepts and subjectivities are consumed as inputs to the Phase I system. They are interacted with additional information/data inputs through the process component and evolve into a direction and formal health facility planning organization. By addressing each component, the guidebook provides some direction through this initial formal planning process.

Inputs

The inputs to this initial formal planning phase include such items as:

- a crystallization of the organizational philosophy which explains the leadership's philosophy with regard to the operation and continuation of the organization.
- specific goals which are developed by the organizational leadership and which support the organization's philosophy and which are applicable to the proposed facility.
- ideas or documents addressing the proposed project.
- a listing of resources (such as people, equipment,etc.) which may be necessary to conduct the planning effort.
- data/information concerning perceived needs/demands for the proposed facility.

Process

During this component of Phase I, the organizational leadership must address elemental interrogatives of: what, why, where, when, how, and who. Issues to be addressed within each of these areas include:

WHAT: What is to be planned?

- describe the objective facility

WHY: Why is it necessary to plan the facility?

- are there some recommended alternatives
- reinforces the planning process within the organization

WHERE: Where is the project in priorities of the organization?

- determine the organization's goals and priorities thereof
- determine where this project lies in those priorities

WHEN: When must the facility be operational?

- determine necessary occupancy date
- estimate length of time to be available for planning efforts
- estimate length of time allowed for design and construction (see Annex B for Design and Funding Time Table)

HOW: How will planning be conducted?

- determine what responsibilities will be given to the planning body.
- formulate committee reporting channels (for planning committee)

WHO: Who will participate in the planning process?

- determine planning committee participants (by name)
- ensure adequate/equitable representation (eg. administration, nursing, clinical services, etc.) on the planning committee.
- seek persons with planning experience.

Output

The outputs of Phase I typically consist of the following:

- direction for the planning activity
- designation of planning body (committee)
- written responsibilities/guidelines for planning body

Cybernetics

The cybernetics or control portion of the Phase I involves the organizational leadership acting as the control mechanism and receiving information (feedback) from designated planning committee members, various staff elements and organizational employees. The information received by the control element from the environment includes such things as information concerning political feasibility of the project from the installation's leaderships, etc. The control element (the organizational leadership) would take this information and influence the input, process or output portions of the system as actions are being accomplished.

This cybernetic portion of the system is the one element which constantly monitors the activity/information contained within the input, process, output elements and adjusts their actions in such a manner that the end product is the one which is most effective and efficient, given the parameters of the environment and resources.

Phase I - Abbreviated Description

Input Components:

- organizational philosophy
- goals of organization with respect to the project
- specification of resources

Process Components:

- determination of the type of facility to be planned (WHAT)
- determination of the necessity for this planning action (WHY)
- determination of the project's priority (WHERE)
- determination of time periods involved (WHEN)
- determination of planning pathways (HOW)
- determination of participants in planning activity (WHO)

Output Components:

- planning organization (committee)
- planning directions (written guidance/responsibilities)

Control Components:

- organizational leadership units

Feedback Components:

- planning organization actions/documents evaluation
- information from participants

Information from the Environment:

- installation's political situation
- information concerning installation's leadership concerns about the future.

The information gathered and the processes accomplished within Phase I, Preparation for Planning Activity, have set the stage for the conducting of further planning activity for the TMC. The planning process moves from its current formulation stage to an activity stage, Phase II, which begins the arduous work of executing the planning activities.

CHAPTER V

PHASE II EXECUTION OF THE PLANNING ACTIVITY

General

Phase II is the portion of the planning process which is characterized by the planning body (planning committee) taking positive planning action to develop a planning document which will adequately represent the requirements of the organization. This phase requires that the planning body be exceptionally concerned about the inputs and the application of the elemental interrogatives in light of these inputs.

Inputs

The inputs to this phase of the planning process include:

- planning organization from Phase I
- planning direction (written) from Phase I
- data/information such as population projections, usage rates (historical and projected), other information from the installation/facility
- planning resources such as personnel, equipment and space if necessary.

Process

The process portion of this phase is rather more complex than was the case during Phase I. This is due to the requirements to make forecasts and determine such items as size, scope of operations, staffing requirements, etc. For this reason, the discussion of the elements within this component of the Phase II system will be rather more detailed than was the

case in Phase I. The same basic elemental interrogatives as were addressed in Phase I will be addressed here:

WHEN: When is the project planning required to be completed?

When is the project to be completed?

- determine the required occupancy date (the date the facility needs to be ready for use)
- determine the amount of time required for design and funding (see Annex B)
- determine the amount of time required for the planning process (see Annex C)

WHO: Who is the population to be supported and what is the size of that population? (see Annex D)

WHAT: What are the services to be provided? (see Annexes E; F)

- determine what staffing is required
- determine what services are to be included in the planned facility (Annex E)
- determine estimated facility size (Annex F)

WHERE: What is the location of the proposed facility?

- determine the location of the proposed facility while considering the following factors:
 - billeting location of population supported
 - working location of population supported
 - transportation provisions for population
 - transportation provisions to support facility
 - location of existing/planned facility support services such as electricity, sewage, water, etc.
 - "supportability" of the facility by the parent medical organization (eg. distance involved, logistical considerations, etc.)

HOW: How will the facility operate?

- determine operational characteristics of the facility in light of the services to be provided, population supported and location. The following factors should be addressed:
 - hours of operation of the facility
 - hours of operation of the services in the facility
 - how will patients access the facility

- how will the facility be supported by logistics, nursing services, administration, emergency evacuation, clinical services, appointment services, etc.
- what will be the referral system

WHY: Why must this facility be planned?

- determine alternatives to the proposed facility

Lastly, the process element of the system should take the elements addressed above and begin to formulate a complete plan which is placed in the appropriate documentation format as required by Army Regulation 415-15 and other special documents (normally in the form of guidance letters or documents from higher headquarters).

Output

The output component of the Phase II system is the culmination of all of the planning efforts conducted by the planning committee. It is at this juncture that the planning committee produces documentation (in the appropriate format) which describes and justifies the project. The planning committee also has produced various records and other documents which clearly demonstrate the pathways traversed in developing the project.

Cybernetics

The cybernetic element of this Phase II system has been operating throughout the input - process - output cycle. The control element (the organizational leadership) has been obtaining feedback on the progress of the planning committee through interim reports and meetings as well as through the

informal channels of communication within the organization. Additionally, the control element has been providing guidance to the planning committee during the process which reflects the various inputs from the environment such as the political message from the installation, changes in future plans at the installation or within the medical organization, etc.

As one can readily perceive, the cybernetics element of the system has not been waiting a final outcome; rather, the element has had to be active to provide advice, support and information to the planning committee.

Phase II Abbreviated Description

Input Components:

- planning organization from output of Phase I
- data/information (eg. population data, usage rates, data/information from installation, etc.)
- planning resources (planning committee)

Process Components:

- determination of planning timeframe (WHEN)
- determination of supported population type/size (WHO)
- determination of services to be provided as well as staffing requirements and size requirements of facility (WHAT)
- determination/consideration of location (WHERE)
- determination of operational concept (HOW)
- determination of alternatives (WHY)
- formulation of plan

Output Components:

- facility plan/documentation
- reports/records

Control Components:

- organizational leadership

Feedback Components:

- meetings, reports, and facility plan
- information from participants, staff

Information from the Environment:

- installation's position on the facility
- changes to the future installation's activities
- changes to the future medical organization's activities

CHAPTER VI

PHASE III EVALUATION AND UPDATE ACTIVITY

General

Phase III of the planning process is one which is most often neglected by planning committees; yet, it is probably equally as important as doing a good job during the Phase II period. This phase takes all of the work that has preceded it and examines it to ensure that the process is adequate for the situation; that it has been done appropriately and that it is current.

Inputs

The inputs to this phase of the planning process include:

- planning organization/resources from Phases I and II
- data/information from Phases I and II
- new data/information

Process

The following actions must occur during the process component of this phase:

- review the previously submitted planning timeframes. This is done to ensure that the planning process remains "on schedule." Update as required. (WHEN)
- review and update information concerning population to be supported (WHO)
- review and update services, staffing and size requirements/computations (WHAT)
- review and update location considerations (WHERE)
- review and update operational concepts (HOW)
- review and update alternatives (WHY)
- review and update plan as appropriate and consistent with new information.

Output

The output of Phase III is a revised, updated health facility plan which has incorporated new information and/or corrected errors in the original plan. It is the evaluated, updated plan which will ultimately be translated into the physical facility; therefore, it is of utmost importance that the review and update process be attacked with the same vigor as was the Phase II process.

Cybernetics

The cybernetics system remains the same as the Phase II element. The only change at this point in time is that the control element closely scrutinizes the updated planning documents to ensure that the facility remains congruent with the future needs of the population supported, the installation, and the medical organization.

Phase III Abbreviated Description

Input Components:

- planning organization/resources from Phases I and II
- data/information from Phases I and II
- new data/information

Process Components:

- reexamination/update of planning timeframe (WHEN)
- reexamination/update of supported population size/type (WHO)
- reexamination/update of services, staffing and space to be provided (WHAT)
- reexamination/update of location considerations (WHERE)
- reexamination/update of operational concept (HOW)
- reexamination/update of alternatives (WHY)
- reexamination/update of plan (incorporating new information/data as appropriate)

Output Components:

- updated facility plan/documentation
- revised reports/records

Feedback Component:

- review of revised plan
- information from participants and staff

Information from the Environment:

- installation's position on the facility
- changes to the future installation activities
- changes to the medical organization's future

Control Components:

- organizational leadership

CHAPTER VII

SUMMARY

The planning process for planning a troop medical clinic can certainly be as complex as the planning process for a larger facility; however, each have common phases of the planning process and must address the same elemental interrogatives of who, what, where, when, why and how. The methodology proffered in this guidebook has been presented in three major divisions: Phase I - Preparation for the Planning Activity; Phase II - Execution of the Planning Activity; and Phase III - Execution of the Planning Activity. Each of these phases have been shown to have similar systems elements which operate with identical components to produce unique, yet related outputs which, when combined, result in a health facility project proposal meeting the requirements of the medical organization and the population supported.

The planning mechanism is, in theory, quite simple; however, the actual execution of and negotiation through the various phases requires the planners to pay close attention to detail and to recognize that the planning process is dynamic and iterative in nature. The planning methodology in this guidebook should not be applied with ultimate rigor; the situations will vary from location to location; however, the basic tenets of this methodology will greatly aid the AMEDD organizations in their TMC planning efforts.

ANNEX A

DEFINITIONS

DEFINITIONS

HEALTH FACILITY PLANNING AGENCY (HFPA) - a field operating agency of the Army Surgeon General which is specifically charged with effecting space planning, design monitoring, budget advice, and construction coordination for all installation medical facility construction projects.

TROOP MEDICAL CLINIC (TMC) - This term is used to describe a small, free-standing ambulatory health care facility located on an Army installation. The TMC as used in this paper may or may not provide ancillary services (such as limited pharmacy, physical therapy, radiological services, etc.) support to the beneficiary population.

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NET SQUARE FEET (NSF) - An amount of usable square footage (floor space) which does not include allowances for wall thickness, mechanical equipment (eg. air handling equipment) or hallways (circulation space); also known as functional space.

GROSS SQUARE FEET (GSF) - An amount of space which includes functional areas (net square feet), allowances for wall thickness, mechanical equipment and circulation space; the total amount of space.

ANNEX B
FUNDING AND DESIGN
FOR ARMY MEDICAL FACILITY CONSTRUCTION PROJECTS

Typical Station Hospital FY 79 Funding-Design Procedure Chart

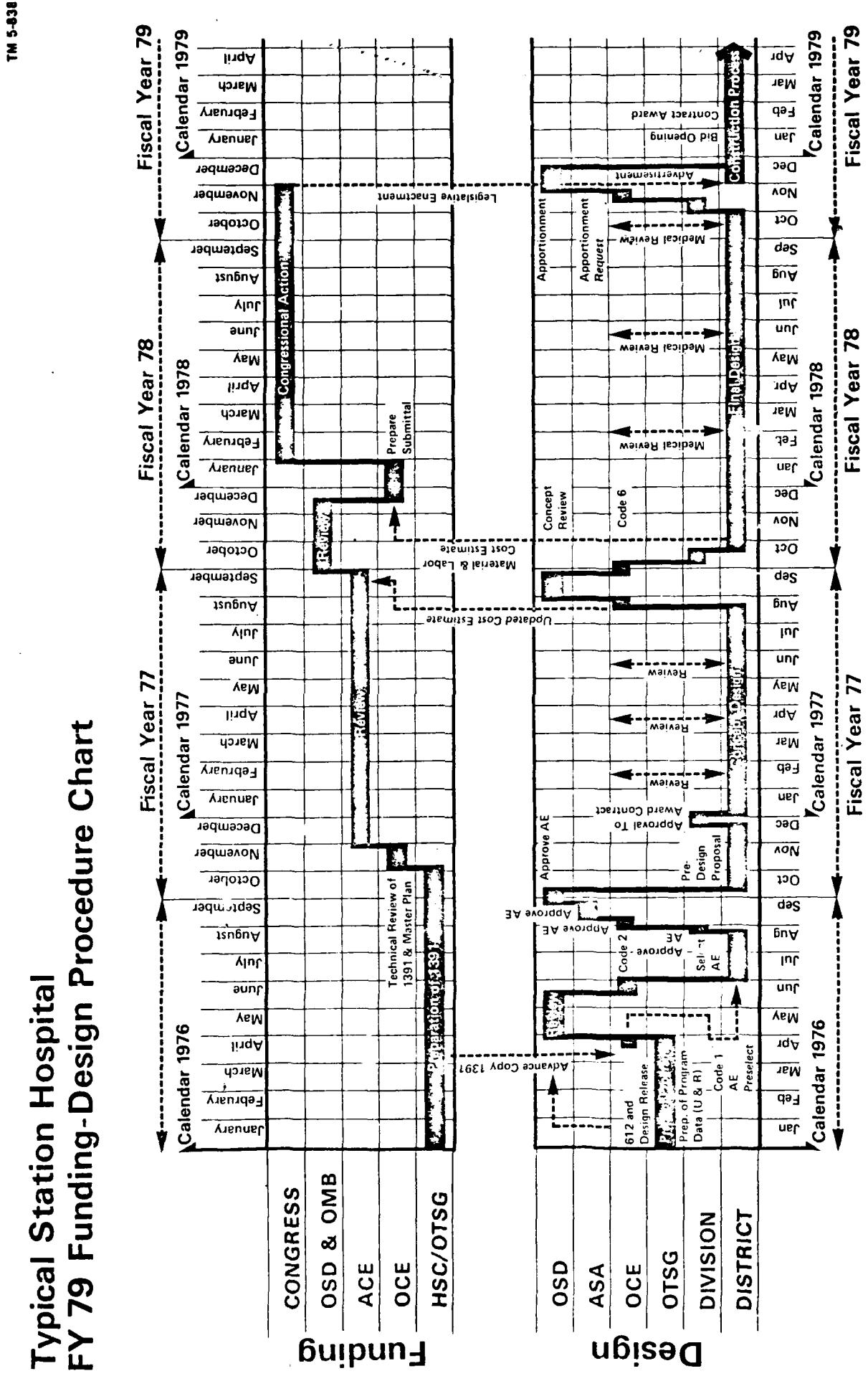


Figure I-1 Funding schedules and design work.

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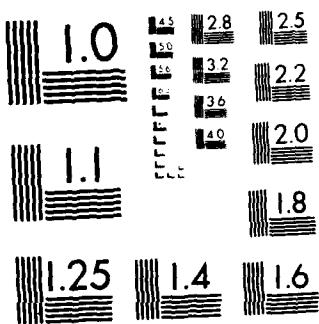
A HEALTH FACILITY PLANNING METHODOLOGY FOR ARMY TROOP 2/2
MEDICAL CLINIC (U) ARMY HEALTH CARE STUDIES AND
CLINICAL INVESTIGATION ACTIVITY F.. D A KRIEGER APR 81

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MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963-A

FUNDING AND DESIGN PATHWAY

It should be noted that the preceding chart provides the typical funding and design process for a station hospital project. It must be realized that the smaller medical facility projects must traverse the same path as the station hospital projects. The planning committee would do well to examine the typical pathway when establishing their projected schedule.

ANNEX C

PLANNING TIMETABLE

PLANNING TIMETABLE

The planning committee's efforts to ascertain the time factor involved in planning a TMC (in response to the "when" interrogative in Phase II) may be facilitated through the development of a planning schedule. This planning schedule can be constructed in many ways; however, it is often useful to "back into" a scheduling problem. That is, to develop the schedule using the targeted completion (occupancy) date as the starting point. The planning committee must incorporate known time factors (such as the Army Medical Facilities Design and Funding Procedure pathway shown in Annex B) into the scheduling process.

A sample time schedule has been prepared depicting the planning efforts (schedule) for a fictitious TMC which is to be occupied in 1990. Specific time periods for each project will vary depending on the type, scope and other facets of the proposed project. The following page presents the sample schedule and notes explaining the certain elements of the schedule.

SAMPLE TIME PLANNING SCHEDULE

<u>TIME PERIODS or EXPECTED DEADLINES</u>	<u>ACTION</u>	<u>NOTES/REMARKS</u>
4/88 - 10/90	Construction activity	see note #1
10/87 - 3/88	Construction award	see note #2
10/86 - 10/87	Final design	"
10/85 - 9/86	Design process	"
10/84 - 9/85	HFPA planning action	see note #3 (Phase III)
3/84	Resubmission/Update	
3/83	Resubmission/Update (Annual requirement)	
3/82	Submission to senior medical command headquarters	see note #4
2/82	Final approval of plan by installation medical organization	see note #4
10/81 - 2/82	Final plan development	see note #5
5/81 - 6/81	Data collection	see note #5 (Phase II)
10/80 - 4/81	Planning preliminaries	see note #5 (Phase I)

Note #1 - This example assumes a 2½ year construction time; obviously the type and scope of a facility will impact greatly on this time. The medical organization must seek advice from senior medical organizations concerning approximate construction time to be expected for the type of facility envisioned.

Note #2 - This period will vary; however, the time shown is typical.

Note #3 - This is the period of interaction with the Army Surgeon General's health planning organization, the Health Facility Planning Agency (HFPA).

Note #4 - The expected deadline date is fictitious.

Note #5 - Again, the amount of time required depends on the type, scope and availability of data/resources.

ANNEX D
POPULATION TO BE SUPPORTED

POPULATION TO BE SUPPORTED

When the planning body (committee) is attempting to discern the population to be supported by the proposed troop medical clinic, many items need to be considered. The planning body should ask if the population to be supported by the proposed troop medical clinic is the same or substantially similar to a population which is currently supported by an existing clinic. In addressing the question of "Who is to be supported?" the planning body should not be lulled into a false sense of security due to the apparent simplicity of this question. For example, two TMCs each supporting three thousand people may at first glance appear to have the same needs in terms of size and services offered; however, if one clinic supports a basic training unit and the other supports a senior headquarters organization, there may be seen some significant differences. The basic trainee unit may generate a large number of podiatric, orthopaedic and respiratory ailments whereas the senior headquarters unit may generate fewer of these ailments but more internal medicine problems. Thus, it is apparent that not only are numbers of persons to be supported important, but the usage rates (by type of service) is certainly a factor to consider in the planning process. In attempting to plan for a TMC, the planning organization must know something of the population other than just the numbers involved. The numbers of personnel involved can usually be determined through

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coordination with the installation force planning organization or other office; however, it may be even more important to identify what type of population is to be supported. The type of population to be supported coupled with the numbers of persons will aid the planners in developing the scope of services to be provided in this troop medical clinic.

ANNEX E
SERVICES TO BE PROVIDED

SERVICES TO BE PROVIDED

Although dogma as espoused by various military regulations and other guidance documents may specify typical types of services at specific categories of facilities, there is nearly always some latitude. It is the responsibility of the planning committee to openly address the requirements of services to be provided at the facility even though the dogma may seem to indicate specific "typical" services to be offered.

Part of the determination of what services are to be offered is the determination of what services and what quantities of services have been demanded by the type of population to be supported by the proposed facility. This can be accomplished in many ways. If the future population is of a similar type of population currently being supported at the installation, then the planning body can compute a usage rate for the current type of population and project that same usage rate to the future population. For example: if Fort Blank had a TMC which had supported three thousand basic trainees (an average figure for a three year period, say for FY 78,79, and 80) and there was an average of twelve thousand clinic visits for the same period, then the historical usage rate for clinic visits (visits per population supported) could be computed by dividing the average clinic visits by the number of personnel supported. In order to facilitate computations and to normally preclude decimals, one could use a usage rate of visits (or any other

service measurement such as lab tests, etc.) per thousand population supported. In that case, this example would yield four thousand annual visits per thousand population as the historical usage rate. If it was expected that the proposed TMC would be supporting four thousand trainees, then the planners would simply multiply the historical usage rate per thousand population supported times the forecasted population figure of four thousand to arrive at a projected number of annual clinic visits of sixteen thousand.

There are some cautions which must be voiced at this juncture. This usage rate method makes the assumptions that: the historical usage rate will continue to be mirrored in the future and that the projected population will be similar (demographically) to the historical population. The planners must be careful to gather historical data from populations which are similar to the future populations. If similar populations are not located at the planning body's installation, then action must be taken to coordinate with another installation which has similar populations in order to obtain appropriate historical usage information.

Services to be considered in light of the usage rates and forecasts could include:

triage	pharmacy services
sickcall	social work services
pathology services - limited	psychiatric services
radiology services - limited	administrative services
immunization service	
specialty services:	
obstetrics/gynecology	
podiatry	
dermatology	
internal medicine	

It is the responsibility of the planning committee to discern the appropriate services to be offered to the population as well as how those services should be operated. (See comments under "HOW" element of the Phase II planning activity.) Again, it is to be impressed that the determination of the type of population to be supported and their projected usage rates/characteristics is just as important as the numbers of personnel to be supported.

ANNEX F
SPACE PLANNING GUIDELINES

SPACE PLANNING GUIDELINES FOR TROOP MEDICAL CLINICS

The computation of space requirements for a TMC involves the coalescing of information concerning the operational philosophy, projected workloads and staffing requirements. These elements coupled with a simple examination, selection and manipulation of elemental space planning guidelines will result in estimated space requirements for a particular facility.

The following pages present a listing of five major functional areas of a TMC: administration; clinical patient area; clinical support functions; ancillary services; and special services. Within each of these areas there are numerous rooms/spaces listed with planning guidelines (requirements) annotated for each space. The planning committee, after determining the appropriate workload and staffing information, can utilize this planning guideline to size the proposed TMC. At the end of the space planning guidelines is a sample space planning document for a fictitious troop medical clinic.

The planning committee must rigorously apply the space planning guidelines in order to estimate a realistic amount of space required for the proposed TMC. The committee must take care to ensure that the estimated space figure derived is computed as follows:

1. Determine (room by room) the amount of space required

- in each functional area.
2. Add those figures to derive a total net (usable space) square footage for the facility as proposed.
 3. Multiply the net square footage total by 1.15 (15% increase allowance to accommodate walls and hallways, etc.) to obtain a TOTAL GROSS SQUARE FOOTAGE figure.

It is this TOTAL GROSS SQUARE FOOTAGE figure which is to be reported as the space required for the troop medical clinic project. This space planning document will provide an estimated amount of space required which will provide the Health Facility Planning Agency with an excellent starting place in their planning process.

TROOP MEDICAL CLINIC

SPACE PLANNING GUIDELINES

SECTION I: ADMINISTRATIVE FUNCTIONS

The rooms/spaces identified in this section provide area for administration in support of troop medical clinic operations.

SPACE/ROOM NAME	NET SQUARE FEET PER ROOM/SPACE	PLANNING GUIDELINES INFORMATION
OIC's Office	120	1 per clinic OIC to be used for clinic administration
NCOIC	100	same remark as above
Administrative Area	135	space is provided for 1 clerk-typist (85NSF); filing area (30NSF) and waiting space for 1-2 people (20NSF)
Admin. Storage Area	60	storage space for administrative supplies
Conference Room	Varies	plan space by taking # of clinic employees (full time) times 6 NSF. The resultant figure will equal the size of conference room. However, the room should be at least 120 NSF.

SECTION II: CLINIC PATIENT CARE AREA

The rooms/spaces identified in this section provide area for accommodating clinical functions in support of patient care activities.

SPACE/ROOM NAME	NET SQUARE FEET PER ROOM/SPACE	PLANNING GUIDELINES/ INFORMATION
Lobby Area	150	1 per TMC
Reception Area	100	1 per TMC
Medical Record Area	computed	compute NSF required by using the following formula: <u>Number of population to be supported x 0.780 by the TMC</u>
		70 records per linear foot
Medical Records Clerk	computed	multiply 80 times the number of full time medical records clerks assigned to the TMC
Screener	120	1 per screener
Physician Asst. Office	100	1 per PA
Physician Asst. Exam	100	2 per PA
Physician Office	100	1 per Physician
Physical Exam	100	2 per Physician
Nurse Clinician Office	100	1 per Clinician

SPACE/ROOM NAME	NET SQUARE FEET PER ROOM/SPACE	PLANNING GUIDELINES/ INFORMATION
Nurse Clinician Exam	100	2 per Clinician
Treatment Room	150	1 per 6 work stations* or fraction thereof (1 work station = 1 office 2 exam rooms)
Patient Waiting Area	compute	compute NSF required using following steps 1. Compute number of seats required by multiplying a factor of 2.6 times the number of exam (includes screener's room) and treatment rooms (if this TMC includes a full time (8 hrs./day) immunization section, add 12 seats). 2. Multiply total number of seats required (from step 1) by 16 NSF each. The resultant figure will be the approximate number of NSF required.
Patient Toilets		The amount of space allocated for patient toilets is based on the total number of patients during peak periods as indicated by the number of seats in the waiting room. The planning body must estimate the number (mix) of male/female patients expected to utilize the TMC. After this is accomplished, the following criteria is used:
Female	computed	For 1-15 female patients seated in waiting room, plan for 50 NSF. For each additional 15 female patients or fraction thereof add 30 NSF. For example, if the clinic has 55 seats in the waiting room and it is estimated that 30% of the patients

SPACE/ROOM NAME	NET SQUARE FEET PER ROOM/SPACE	PLANNING GUIDELINES/ INFORMATION
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seen at the TMC are female then the amount of space for toilets for females is computed as (total number of waiting room seats) X (% female)=number of female patients anticipated ie. $55 \times 30\% = 16.5$; rounding up we have 17 female patients expected. Therefore, 50 NSF is required for the first 15 female patients and 30 NSF for the 2 additional female patients.

Male	computed	For 1-20 male patients seated in the waiting room, plan 65 NSF; for each additional 20 male patients or fraction thereof add 30 NSF. The same process as was displayed for computing toilet facilities for female patients is used for computing toilet facility space for male patients.
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SECTION III: CLINIC SUPPORT FUNCTIONS

The rooms/spaces identified in this section provide specialized support functions for the TMC.

SPACE/ROOM NAME	NET SQUARE FEET PER ROOM/SPACE	PLANNING GUIDELINES/ INFORMATION
Linen Alcove	50	1 per TMC
Utility Room	100	1 per TMC
Soiled Collection	50	1 per TMC
Central Supply Room	200	1 per TMC
Litter and Wheelchair Storage	50	1 per TMC
Staff Lounge	150	1 per TMC
Staff Lockers		
Male/Female	computed	6.5 NSF per employee not having office space
Staff Toilet		
Male	65	1 per TMC
Female	110	1 per TMC (includes retiring area of 60 NSF)
Janitor Closet	40	2 per clinic

SECTION IV: ANCILLARY SERVICES

The rooms/spaces delineated in this section are for specific ancillary services. Note that these services may or may not be included within the TMC depending on the operational concept/TMC capabilities.

SPACE/ROOM NAME	NET SQUARE FEET PER ROOM/SPACE	PLANNING GUIDELINES/ INFORMATION
<u>LABORATORY SERVICES:</u>		
Control/Clerical	60	1 per lab
Specimen Receiving	30	1 per lab
Patient Waiting	140	1 per lab
Specimen Toilet	45	2 per lab
Venipuncture Area	25	1 per technician authorized
Lab Module	160	1 per lab
Lab NCOIC/OIC Office	100	1 per position programmed
General Storage	80	1 per lab
Decontamination	120	1 per lab; add 15 NSF if this room serves as a CMS function for the TMC
Utility Room	80	1 per lab
<u>RADIOLOGY SERVICES:</u>		
Control Area	60	1 per x-ray section
Patient Toilet	50	1 per x-ray section
Dressing Cubicles	20	3 per radiographic room
General Radiographic Room	270	1 per TMC (special study required for more than 1) 1 room will accommodate 8530 x-ray exposures (less chest files) annually

SPACE/ROOM NAME	NET SQUARE FEET PER ROOM/SPACE	PLANNING GUIDELINES/ INFORMATION
Film Processing Room	90	1 per x-ray section
Film Viewing/Storage	125	1 per x-ray section with 1 radiographic room. Special study required for TMC with more than one radio- graphic room.
Utility Room	50	1 per x-ray section
Radiology Officer/NCOIC Office	100	1 per x-ray section for position programmed
Patient Waiting	75	1 per radiographic room
<u>PHARMACY SERVICE:</u>		
Waiting Space	150	1 per pharmacy
Dispensing	200	1 per pharmacy
Drug Storage	100	1 per pharmacy
Secure Drug Storage	25	1 per pharmacy
Office Space	85	1 per pharmacist authorized
Admin. Area	85	1 per pharmacy

SECTION V: SPECIAL SERVICES

The rooms/spaces identified in this section are those which are used in special circumstances to support the operational concept of the TMC. Special justification/study should be accomplished to support the need for these spaces and concomitant functions. Include these spaces only if they are required/staffed on a full time basis unless otherwise annotated.

SPACE ROOM NAME	NET SQUARE FEET PER ROOM/SPACE	PLANNING GUIDELINES/ INFORMATION
Consultation Office	100	1 per regularly scheduled consultant eg. orthopaedists, otorhinolaryngologist, dietitian, etc.
Consultation Exam	100	2 per consultation office
Admin. Officer Office	100	1 per full time position
Nurse's Office	100	1 per full time position
Social Worker's Office	140	1 per social worker programmed
Special Procedures Room (Trauma Room)	180	1 per TMC if TMC is open 24 hours per day and has staffed trauma (emergency) section
On Call Sleeping Room	100	1 per person on duty in TMC during non-duty hours
Ambulance Dispatch	140	1 per clinic when drivers are assigned and/or located at TMC
Chest X-ray Room	200	1 per TMC when authorized by special study

SPACE COMPUTATION METHODOLOGY

The computation of space requirements for a TMC involves the coalescing of the information concerning the operational ^{xx} philosophy of the TMC, the projected workloads and ^a stuffing requirements. These elements coupled with a simple examination, selection and manipulation of elemental space planning guidelines will result in estimated space requirements for a particular facility (TMC). The methodology for determining the estimated amount of space required for a proposed TMC project can be described in the following step - by - step outline.

TAKE: INPUT INFORMATION/DATA
Operational philosophy
TMC functions
Anticipated (projected) workload
Projected staffing (by position, if possible)

APPLY IT AGAINST: SPACE PLANNING GUIDELINES
for each functional area of the proposed TMC.

OBTAIN: ESTIMATED NET SQUARE FOOTAGE
for each functional area of the proposed TMC.

ADD UP: ESTIMATED NET SQUARE FOOTAGE
for all functional areas which will result
in a total estimated net square footage
figure for the proposed TMC.

MULTIPLY: TOTAL ESTIMATED NET SQUARE FOOTAGE FIGURE (OBTAINED
ABOVE) BY 1.15. (This adds a fifteen percent
allowance for mechanical and other special
space requirements such as hallways, etc.)

RESULT: THE TOTAL GROSS SQUARE FOOTAGE REQUIRED FOR
THE PROPOSED TROOP MEDICAL CLINIC.

SAMPLE SPACE PLANNING WORKSHEET

The following pages provide a sample space planning worksheet which can be used by the users of this guidebook as an example of the end product of the application of the space planning guidelines. This sample space planning worksheet was developed on the following information:

Workload information:

- outpatient visits projected : 3000 monthly visits
- * laboratory workload : none : lab not provided
- * radiology workload: none; x-ray not provided
- * pharmacy workload: none: pharmacy section not provided
- * ancillary services (other): none: none provided

Staffing information:

twenty-five employees projected (full and part time)
screeners - 2
physician assistants - 3
physicians - 1
records clerks - 2
administrative specialist - 1
NCOIC - 1
receptionist - 1
administrative clerks - 2
others - 12

Services information:

This fictitious clinic will provide no ancillary services. Patients will be triaged, screened and treated at this facility. Diagnostic procedures will be accomplished at the installation hospital.

- * It should be noted that each facility to be planned will have different requirements and characteristics. Some facilities will require a full range of ancillary services; others, like this fictitious facility, will require none. The planning committee must ensure that appropriate facilities are planned and that the facility has only those services which are truly required.

SAMPLE

SPACE PLANNING WORKSHEET

SECTION	ROOM NAME	NSF/ ROOM	# ROOMS	TOTAL NSF	REMARKS
Admin.	OIC	120	1	120	
	NCOIC	100	1	100	
	Admin Area	135	1	135	
	Admin Storage	60	1	60	
	Conference	150*	1	150*	*25 employees times 6 NSF each (Minimum 120 NSF)
Cl. Pt. Care	Lobby	150	1	150	
	Reception	100	1	100	
	Med. Rcds.	45*	1	45*	*4000 population supported
	Rcds. Clerk	80	2*	160	*2 Clerks
	Screener	120	2*	240	*2 Screeners
	PA Ofc.	100	3*	300	*3 PA's
	PA Exam	100	6	600	
	Phys. Ofc.	100	1*	100	*1 Physician
	Phys. Exam	100	2	200	
	Treatment	150	1	150	
	Pt. Wait.	465*	1	465*	*1.(2.6)x(10 exam + 1 treatment rm)=28.6=29 seats. 2. (29 seats)x(16NSF)=464=465 NSF
Pt. Toilets*	female	50	1	50*	*10% of pts. expected to be female Since 29 seats are planned; 2.9 or 3 female
	male	95	1	95*	patients expected 26 male patients expected

SECTION	ROOM NAME	NSF/ ROOM	# ROOMS	TOTAL NSF	REMARKS
Clinic Support	Linen Al.	50	1	50	
	Utility	100	1	100	
	Soiled Col.	50	1	50	
	Cen. Sup.	200	1	200	
	Litter Stg.	50	1	50	
	Staff Lgn.	150	1	150	
	Lockers male	40*	1	40*	*12 employees have no office space; of these it is expected that the male-female mix will be 50%-50%. Therefore, male lockers = $6 \times 6.5 \text{ NSF} = 39 = 40 \text{ NSF}$: same for females
	female	40*	1	40*	
	Staff Toilet male	65	1	65	
	female	110	1	110	
	Janitor Closet	40	2	80	
Lab	None			0	
Radiology	None			0	
Pharmacy	None			0	
Special	None			0	

TOTAL NET SQUARE FOOTAGE BY SECTION:

SECTION	NSF
Administration	565
Clinical Pt. Care	3550
Laboratory, Radiology, Pharmacy and Special Areas	0
TOTAL	4115
+ 15% Mechanical	617
GRAND TOTAL	4730
	GROSS SQUARE FEET

BIBLIOGRAPHY

Books

- Allen, Rex Whitaker and Ilona Von Karloyi. Hospital Planning Handbook. New York: John Wiley & Sons, 1976.
- Blum, Henrik L. Planning for Health. New York: Herman Sciences Press, 1974.
- Goldsmith, Seth B. Ambulatory Care. Germantown, Md: Aspen Systems Corp., 1977.
- Hardy, Owen B. and Lammers, Laurence P. Hospitals, the Planning and Design Process. Germantown, Md: Aspen Systems Corp., 1977.
- Hepner, James O. Ed. (Case Studies in Health Administration, Vol. I) Health Planning for Emerging Multihospital Systems. St. Louis, Mo: CU Mosby Co., 1978.
- Joint Commission on Accreditation of Hospitals. Accreditation Manual for Hospitals. 1981 edition. Chicago, Ill: Joint Commission on Accreditation of Hospitals, 1980.
- Krueckeberg, Donald R. and Silvers, Arthur L. Urban Planning Analysis: Methods and Models. New York: John Wiley & Sons, 1974.
- Peters, Joseph P. A Guide to Strategic Planning for Hospitals. Chicago, Ill: American Hospital Association, 1979.
- Spiegel, Allen D. and Hyman, Herbert H. Basic Health Planning Methods. Germantown, Md: Aspen Systems Corp., 1978.
- Warner, Michael D. and Holloway, Don C. Decision Making and Control for Health Administration. Ann Arbor, Michigan: Health Administration Press, 1978.

Periodicals

- Breindel, Charles L. "The Myth of Micro and Macro Health Planning." Hospital and Health Services Administration Special I (1980): 38-47.
- Friedman, Emily, "Public Press: Costs Become Major News." Hospitals 52 (April 1, 1978): 143-148.

- Galvagni, William. "Local vs. Regional Planning: A Delicate Balance." Hospitals 52 (November 1, 1978): 77-80.
- . "Structured Evaluation is Key to Effective Planning." Hospitals 54 (August 1, 1980): 52-54.
- Grubbs, Judy et al. "Bringing the Medical Staff into Hospital Planning By Sharing Data." Hospitals 55 (January 16, 1981): 73-76.
- Janke, Thomas A., LTC. "How to Manage Anything (Practically) Systematically." US Army-Baylor University Bulletin of Continuing Education. (Fall and Winter 1979): 1-9.
- Peters, Joseph P. "Creativity in Planning: Prerequisite for Success and Survival." Hospitals 53 (December 16, 1979): 64-66.
- Rees, Frank W., Jr. "Mathematical Modeling Can Identify Departmental Space Needs." Hospitals 54 (December 16, 1980): 109-112.
- Rice, James A. "Interinstitutional Planning Process, Part 1. Free Standing Hospitals." Hospitals 54 (July 1, 1980): 53-56.
- Schezinger, Ira H. "Ongoing Transition is Forecast for Hospitals." Hospitals 54 (January 16, 1980): 62-65.
- Zelner, Lawrence and Badner, Barry. "An Engineers Approach to Data Collection and Planning." Hospitals 53 (March 1, 1979): 62-64.
- US Government Documents
- US Department of the Army. Army Health Facility Design. TM 5-838-2.
- . Army Medical Treatment Facilities. AR 40-2.
- US Department of Health Education and Welfare. Guidelines to Functional Programming, Equipping and Designing Hospital Outpatient and Emergency Activities. Pubn. (HRA) 77-4002.
- . Hospital Outpatient and Emergency Activities Functional Programming Guidelines. Pubn. (HSM) 73-4002.
- . Space Guidelines for Ambulatory Health Centers. Pubn. (HSA) 75-6014.

Interviews

Brown, Ross, Oklahoma Health Planning Commission. Interview,
24 March 1981.

Moro, Kenneth S., Major, MSC, Health Facility Planning Agency.
Interview, 13 January 1981.

Unpublished Material

US Army Health Facility Planning Agency. "Space Guidelines for
Facilities Programming of Health Clinics." OTSG (SGFP-ZA)
Washington, DC 20310 16 May 1979.

US Army, Letter, Headquarters, Health Services Command
(HSPA-A). Subject: Medical Clinic Planning.
(Undated).

